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BLISTER RUST NEWS



January 1927.

Volume XI

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U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 11, No. 1

January, 1927

NEW YEAR'S GREETING FROM THE SECRETARY

Dr. W. A. Taylor,

Chief, Bureau of Plant Industry.

Dear Dr. Taylor:

With the opening of a new year I am impressed by the constructive achievements which the Department of Agriculture has made during the past year. These have been due in no small measure to the self-sacrificing labors performed in the various bureaus and offices. The scientific ability and zeal for truth shown by you and your colleagues are worthy of high tribute. Please accept for yourself and your associates my cordial wishes for a new year full of continued achievement and happiness.

Sincerely yours,

(Signed) W. M. JARDINE
Secretary.

Permit me to add my own good wishes. The faithful service rendered by all, welded together by the fine spirit of cooperation so universally prevalent in the Bureau, has made the Bureau of Plant Industry an organization respected on the outside, and in which we alike take pride and find pleasure in our work.

Very sincerely,

(Signed) Wm. A. Taylor

Chief of Bureau.

INFECTION AT LISBON, N. H., COMPARABLE TO THE WATERFORD AREA

I spent a very profitable day recently in company with Mr. S. B. Detwiler and Mr. E. C. Mandenberg, looking over some large infected areas in the towns of Lisbon and Littleton. The area we visited in Lisbon is comparable with the Waterford area, from point of infection, and the trees are just as tall. It will be worth while to get some data on this lot and also to take some photographs.

In looking over the Adams lot in Littleton we came across some old growth white pines, four in number. These trees are at least five feet in diameter and we estimated them to be about three hundred years old. One of the trees is a memorial to the daughter of Mr. Adams, who spent many happy hours under its spreading limbs. Some surgery work has been done on it and a tablet erected at the base. These old pines surely are the mothers to numbers of others, as the lot we were on is the densest stand of pine in this locality.

We found infection on the white pine plantation of Mr. John Hutchins in North Stratford. This is the farthest north that infection has been found on pine in New Hampshire to my knowledge. It was quite a surprise to find such a large number of the trees either dead or dying from blister rust. Mr. Hutchins was quite alarmed but will have all his pine areas worked next year to insure future protection. If any of the Agents are ever passing this locality, it would be well to pay the place a visit. The plantation is on the Daniel Webster highway about two miles south of North Stratford.

While on our trip north I mentioned the fact to Mr. Detwiler that it would be much better to put up tin signs in the future similar to those used by the State Forestry Department. We noted that very few of the cardboard ones

put up last summer are left. They are either torn down or blown away. The tin ones will last forever, can be placed in more advantageous positions, and I believe will get more respect from the highway vandals.

T. L. Kane, N. H.

THIRD JOINT EXHIBIT:

A third joint exhibit featuring blister rust and forestry was placed at Fryeburg Fair by Agents Curtis of Oxford County, Maine and Boomer of Carroll County, New Hampshire.

In previous years blister rust specimens and pictures made up the entire exhibit; this year a forestry demonstration was added with satisfactory results. Perhaps the feature of the exhibit was a collection of samples of wood which were stained while the tree was alive. They demonstrated the possibility of staining the live tree uniformly throughout its sapwood, in 48 hours. These samples attracted considerable attention and acted as an ice-breaker. They helped materially in talking blister rust.

The most important part of the blister rust exhibit were four large trunk infections, the largest of which was about twelve inches in diameter. They were arranged on a framework at an angle of about 45 degrees and could be examined without handling.

The agents both agreed that the fair was a success, blister-rustically speaking.

S. H. Boomer,
Carroll Co., N.H.

MAINE PINE OWNER DESTROYS "\$50 RIBES BUSH"

While checking in Bridgton last summer I was startled to hear a voice from an adjoining lot exclaim, "There's a twenty five dollar one gone to glory." This sounded interesting and while I was listening, in an attempt to find out what it was all about, I heard, "By Crackie, that's a fifty dollar one. Pity I didn't know about this years ago." This was too much and I simply had to find out what it meant. Thought I must be on the trail of Captain Kidd's treasure but it was only the town foreman and Mr. Perley Bennett eradicating Mr. Bennett's lot by the "two-man-crew" method. Mr. Bennett, who is over seventy years of age, placed a value on each Ribes bush he found according to the amount of damage he estimated the bush would do.

Salon D. Conner, Me.

FAVORABLE ACTION ON AGRICULTURAL APPROPRIATION BILL

The Agricultural appropriation bill has been passed by Congress and is in the hands of the President. It carries an item of \$471,520 for 'blister' rust control, of which \$200,000 is for allotment to the Eastern Control work, \$260,000 for the Western work and the balance for reclassification and statutory salaries.

January 18, 1927.

R. G. Pierce.

Plan, then plug.

Forbes Magazine, Dec. 15, 1926.

EASTERN WHITE PINE MOVES WEST

Altogether about 2,000 acres of eastern white pine were planted in northern Idaho and western Montana. A plantation on the Kootenai National Forest planted in 1911 now has trees 30 feet high; one measured $5\frac{1}{2}$ inches at breast height. The trees have made double the growth of the native white pine of about the same age intermingled with them. Early reports on this plantation record snow breakage when the trees were younger but very likely the trees outgrew the injury, for the early damage is no longer apparent anywhere on this area.

Extract from "American Forests and Forest
Life, January, 1927.

WINTER NOTES FROM VERMONT

Mr. F. H. Rose, agent in Central Connecticut river valley district has been assigned work in Orleans County for a few weeks. Mr. W. E. Braddor, agent in Rutland County, will have interviews in Bennington County this winter, as well as in his home district. Ribes and small pines are well under snow.

S. V. Holden, Vermont.

EDUCATIONAL WORK IN MICHIGAN

Mr. E. C. Mandenberg, of the Michigan Department of Agriculture, gave a talk on white pine blister rust conditions in the Northeast at the Forestry Club at the Michigan Agricultural College, early in January. A large collection of lantern slides, 10 colored enlargements of photos taken in the Adirondacks and at Waterford, Vt., and a five-wing panel were sent Mr. Mandenberg for this talk. He recently reported: "I gave my blister rust talk at the college last Tuesday night with about sixty students and a few members of the faculty present. The slides which you furnished went big."

Saratoga Lake,

White Sulphur Springs Hotel,

April 11, 1926.

A POEM

After a confidential visit this morning with a large hemlock* tree standing by the spring near the State road, the very tree I persuaded the road builders not to cut, and noting the tree was poetically inclined, I wrote the following in twenty minutes, using the usual lumberman's grammar, with apologies.

T. C. Luther.

"The White Pine Tree* and Me."

I looked out of my window this morning at a noble forest tree,
a gentle zephyr blowing, caused it to nod in love to me.
I remarked to my good lady what a beautiful white pine tree,
Just then a strong wind blowing, caused it to make salute to me.

I opened my window and talked to that famous white pine tree,
She whispered back in confidence, that she surely could trust me,
Told me all her troubles, and asked me what will become of all trees,
If the forests are not planted and protected by lovers of trees like me.

She said you protected me once when men came to cut your trees,
Now see what I have done for you in saving the life in me.
I have strewn your park with beautiful children of the noble white pine tree,
To bring joy, comfort, and everlasting benefit, to you and me.

I shade your spring, house the birds, and tell all the other trees,
To do all they can for their country's good, so they commissioned me,
To proclaim we are the oldest living thing; I refer to our brother, the
redwood tree,
So why should we not be protected, for the whole country's sake and me?

*Apologies are due the author, because we have taken the liberty of charging "hemlock" to "white pine", wherever it occurred in his verses. But of course we could not boost hemlock in a white pine publication, and anyway, Mr. Luther is grandfather to so many millions of white pine trees that he really should have written "white pine" in the first instance.

Those who have never met Mr. Luther and seen his hundreds of acres of thrifty forest plantations have a rare treat in store, for all foresters, sooner or later, make his acquaintance. It is of men like Tom Luther that Douglas Malloch wrote:

"I love the man who loves the wood,
Whate'er his creed, whate'er his blood.
I may not know his native land;
His creed I may not understand,
But, when we meet within the wood,
There each is silent - understood."

S.B. Detwiler.

OBSERVATIONS ON WHITE PINE BLISTER RUST IN GREAT BRITAIN AND DENMARK

Observations on blister rust (Cronartium ribicola Fisch.) in Great Britain during the period from June to October, 1925, being incidental to the study of the Phomopsis disease of Douglas fir, were necessarily fragmentary and very limited. In Denmark, while only one place was visited, this was for the definite purpose of seeing blister rust conditions.

The Rust in Great Britain

The disease came to notice first on June 9 in Bagley Wood near Oxford where a small plantation of eastern white pine (Pinus strobus L.) was very heavily infected. Of the trees from 3 to 8 inches diameter breast-high, many had already been killed, while the remainder were dying rapidly. Branch cankers were the exception, while stem cankers, in many cases just a foot or two above ground level, were abundant. The trees stood 100 to 150 feet distant from a few bushes of European black currant (Ribes nigrum L.) in a garden. Aecial sporulation was about over, while uredinia were just beginning to show as occasional spots on the currant leaves.

An opportunity was afforded here to compare the relative susceptibility of eastern white and Himalayan (P. excelsa Wall.) pines. Two trees of the first-named species about eight feet high were fully exposed to infected black currant bushes about 30 feet away. The trees had stem cankers and several branch cankers close to the stems. The two Himalayan pines of the same size as, same exposure to, and same distance from the black currants, were free from infection.

Uredinia and telia were very abundant on European black currants on September 2 at Westwick near Norwich. In one very heavily infected 10-acre block, a new variety developed here and called the Davidson, was relatively free from the rust. A second block of about 10 acres was similar to the above, while in a third block of 25 acres this variety also was very heavily infected. There were a very few 5-needle pines on this estate, and the forester stated that

5-needle pines were rare in the surrounding country. Several Himalayan pines at some distance from the currants seemed free from infection, after a hasty examination, as did two Swiss stone pines (P. cembra L.) about 500 yards from the second block of currants and relatively exposed. It is quite probable that these two stone pines belonged to the Alpine variety *helvetica*, which as Spaulding* has pointed out, is quite resistant. The amount and intensity of the infection on black currants at this place can be explained only by heavy uredinial spread, since the initial infection, if it came from pines, must have been light. The possibility of the rust over-wintering on *Ribes* in this mild climate demands consideration.

One fact that stands out in relation to blister rust in Great Britain is the decided scarcity of wild *Ribes*, according to our standards. On some estates flowering red currant (R. sanguineum Pursh.) has been planted throughout the woods for its decorative value, but on the whole there are many places where 5-needle pines could be grown, the only protection necessary being the eradication of a few black currants. However, the British have abandoned the planting of 5-needle pines except for ornamental purposes. Even if the situation as outlined above were fully understood by the majority of foresters, there would be no change in the present attitude. In the first place, the black currant is highly esteemed. In the second place, British foresters feel that it is poor policy to plant an introduced species on a commercial scale when it is known beforehand that there will be an added charge against the species to protect it from a dangerous disease already established.

J. S. Boyce,
Journal of Forestry, Dec. 1926, Vol. 24, No. 8

*Spaulding, Perley. 1925. Notes upon the white pine blister rust in Europe and upon conditions affecting its status here. Unpublished manuscript, 100 p. Office of Forest Pathology. U.S. Dept. of Agriculture, July 29.

NEW HAMPSHIRE AGENTS GET ENLARGED DISTRICTS

Upon the resignation of Mr. D. B. Keane, Agent in Sullivan County, Mr. L. E. Newman in charge of Blister Rust Control in New Hampshire, divided the district among Messrs. Baker, King, and Richardson.

The following extract is from letter dated November 16, 1926, to Selectmen of Sullivan County:

"Therefore, in the future Mr. Fred J. Baker, who is located at the Farm Bureau office at Keene, will in addition to the county of Cheshire supervise all blister rust work in Langdon, Charlestown, Acworth, Lempster and Washington. Mr. T. J. King, agent for Merrimack County with offices at the Farm Bureau in Concord, will have charge of Claremont, Goshen, Newport, Unity and Sunapee. Mr. Geo. F. Richardson, Jr., located at Room 2 Billings Block, Lebanon, will supervise the work in Cornish, Grantham, Croydon, Springfield and Plainfield."

L. E. Newman,
Agent in Charge.

CONTROL WORK IN VERMONT IN 1926

During the calendar year 1926 a total of 22,650 acres of land in Vermont were rid of 257,742 wild currant and gooseberry bushes. These bushes were destroyed in order to prevent the spread of the blister rust disease, which goes from the currant and gooseberry bushes to the pines, but cannot spread from one pine to another.

The eradication work is carried on under the direct supervision of the Vermont Forest Service in cooperation with the Bureau of Plant Industry. The land owners pay for the eradication work but the state furnishes trained foremen to supervise the same. Any land owner who desires to have an inspection of his pine lands should notify the Vermont Forest Service.

Green Mountain State Forest News
December, 1926.

THE EDUCATIONAL VALUE OF A BLISTER RUST FILM

Do we need a new blister rust film, and if so, how should it be constructed? This is, in substance, the question we were asked by Mr. Detwiler at our recent conference in Albany. I want to go a little deeper and discuss the educational value of motion picture films. Let me also state that this analysis is intended primarily to clarify my own ideas on the subject and I don't pretend to be establishing facts. Perhaps we can get at the facts, if others who may hold different views will express them. The subject is worth considering.

Our ultimate purpose in giving a talk or using the stereopticon or showing a film is to educate our audience upon the subject of blister rust; but the mere presentation of facts is not in itself educational. It is easy to present facts if we know them. It is an entirely different matter to so present them as to arouse interest, get them remembered and put to a practical use. That is our job and the choice of material is of utmost importance in putting the job across. That the material chosen should be adapted to the audience with which we are dealing needs no elaboration. There is no need to argue that the stereopticon is better adapted than are films to an educational talk before a select audience. Unfortunately most of our audiences are not select audiences in the sense that they have our educational background and an interest in our subject. Our average audience is made up of the old and young, educated and uneducated, frivolous and serious-minded. Some come for the sole purpose of being amused, others come to be instructed and all want some entertainment. We must cater to all tastes. We cannot ignore the young because they may be the pine owners of the future; the elders are the pine owners of today, and the thoughtful are no more apt to be pine owners than the frivolous. Moreover, anyone may be instrumental in influencing others. With such a variety of tastes to please our choice of material is important and the motion picture if it is properly constructed ought to fill the bill.

What do we hope to accomplish by the use of the film? It seems to me that there are three things to be attained.

1. To attract a large number of people.
2. To entertain and get them into a receptive mood
3. To instruct them.

Probably there is no better way of attracting an audience especially in the rural communities, where opportunities for such entertainment are limited, than through the use of motion pictures. While an advertised talk may or may not attract a good crowd, depending largely upon the reputation of the speaker and the subject of his talk, a motion picture is pretty apt to bring out a good-sized gathering.

But when it comes to getting the cooperation of the audience and creating in it a receptive mood the motion picture has no distinct advantage over other forms of entertainment except that it is easier for the one responsible for putting the educational ideas across. The entertainment of the average audience is quite essential if it is to be instructed because a bored or critical audience is either indifferent or

antagonistic. I have the impression, judging from my own experience, that we often bore our audience by too many reels containing little or no action. One or two scenic reels or reels consisting of a succession of views may hold the interest and get across in good shape, but in order to sustain interest for any great length of time, we need either a human interest story or else action presented in a novel and ingenious way. My chief criticism of the old blister rust films is that they lack action. The one blister rust film that contains a human interest story is "The Pines" and while it is a remarkably good piece of amateur acting, there is still something lacking. In spite of ourselves we are aware that it is an amateur performance. I may be hypercritical, but I suspect that a large part of the educational value of the film is destroyed when the mind is diverted from the story and its lesson by faulty mechanics, if I may so express it. Perhaps I am wrong in this respect and possibly a faulty vehicle does not detract from the effectiveness of its educational burden. My idea is that a scenario made by professionals, played by professionals and directed by professionals, could put across the educational material in story form without detracting from its value through imperfections in presentation. If such is too pretentious and costly an undertaking to get the approval of the "powers that be" why not experiment with the animated cartoon? The latter method has been used most successfully in the "Cattle Tick" film and I believe can be used equally effectively in our line. It is relatively inexpensive, it has plenty of action and if well drawn and ingeniously constructed has a novelty that would hold the interest. Moreover it is simple and "all meat." If used to supplement a short talk I believe it would accomplish its purpose.

In my tabulation of the essential things we hope to accomplish by the use of the motion picture film, I did not mention the most important objective in our educational efforts. That is the practical application of the ideas we get across. As I see it that cannot ordinarily be accomplished by telling a group of people they ought to do certain things. To get action we must follow up our educational work with personal interviews where the appeal can be made specific and by field demonstrations if necessary. Even with such efforts our experience has shown that one or more "follow up" calls will most likely be required before the job is actually under way.

Of course, the foregoing arguments obtain only when we expect educational results from the film itself. If a motion picture is used simply to attract an audience and to keep it good natured so that it will be favorably inclined to receive our ideas, a high grade film is not so essential. The easiest and safest plan is to consider the film as a drawing card and as a means of entertainment only and to depend for educational results upon a short, clear, well planned talk.

To answer my first question, I believe we do need a new film and I would like to see enough money expended to assure so good a production that the mechanism of the vehicle is lost sight of in the story and ideas that the story carries. This cannot be such a difficult task as it sounds because it is being done continually in the professional

films. Such a film would have two distinct advantages. It would take some of the burden of entertainment off the agent's shoulders and it would raise the standard of our educational efforts in the eyes of the public. Since the intangible impressions that the public gets from our educational efforts is as important in getting results as the direct impressions due to the logic of our argument, to impress our audience with a high standard of our educational work is not so unimportant as it may casually appear. Again my psychology may be wrong.

When it comes to furnishing ideas for a scenario such as I am urging I must admit that I cannot qualify. But there must be plenty of others who can.

As I read this over it sounds somewhat pedantic and I am not sure but many of its readers will consider it valueless. If so, the title might well be changed to "Much Ado About Nothing." But if these ideas are worth considering either pro or con, I would be interested in seeing them written up, especially the "con", because I am not at all sure that I have the right slant on this subject of the educational value of motion picture films.

J. E. Riley, Jr.

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A LETTER FROM ANDY

"Dear Mr. Pierce,

I am writing you in the hope that you will be able to express through the News Letter the thanks I should like to convey to the blister rust men who sent me the candy, fruit, flowers and potted plant from the last conference at Albany. I should like to be able to write all of them individually and thank each in person, for such an expression of good will from former associates as Dr. Pennington brought me, really deserves better thanks than these faint words.

I've been feeling fine and frisky these days and the Doc says I'm on the mend, though not able to go skating next week.

Sincerely,

O. C. Anderson."

RESOLUTIONS ADOPTED AT MEETING OF TRUSTEES
OF WESTERN WHITE PINE BLISTER RUST CONFERENCE
PORTLAND, OREGON, DECEMBER 4, 1926.

* * *

1. Appreciation.

The Conference expresses its appreciation of the work of the Offices of White Pine Blister Rust Control and Forest Pathology, United States Department of Agriculture, on the excellent work accomplished during the past year and the encouraging results obtained. The Conference also thanks the Federal Forest Service officers, the timber protective associations, the state agencies and all the various individuals and organizations which have so heartily and effectively cooperated in the campaign.

2. Quarantine Progress.

This Conference believes that the principle of the disinfection and certification of nursery stock grown in dangerous sections, as provided in Federal Quarantine No. 63, is a step in the right direction in the development of better plant protection measures in the United States, while recognizing with appreciation the cooperation already generously given by all states.

3. State Cooperation.

The Conference respectfully but insistently urges upon the legislatures of the western states concerned; the need for increasing the direct appropriations necessary to support and extend the blister rust control work conducted by the agencies of the Federal government. The Conference recognizes the mutual obligation resting on the western states and the Federal government.

4. Blister Rust Appropriation.

The Conference urges upon the representatives of the western states in Congress the necessity for the appropriation of \$273,500 for the control of the white pine blister rust in the West during the fiscal year 1928 and requests their most active efforts in support of this item in full. The responsibility of the Federal government to carry through the 10-year program of the Blister Rust Conference, supplemented to take care of the coastwise advance of the disease, is clear when it is considered that over half of the white pine acreage in this region is in Federal ownership. The future growth and production of western white and sugar pine in the far West is primarily a matter of public rather than private interest and Federal aid should not be contingent; as has been the eastern custom, on matching of Federal funds by state and private agencies.

5. Federal Forest Experiment Station Work.

Recognizing that the protection of the many billions of feet of white pine on national forests of the region, as well as the production of future forest crops in the very large acreage of white pine lands in these national forests, is dependent on control of blister rust, the Conference recommends that western senators and congressmen make all possible effort to secure passage of the Johnson Bill, H. R. 12335, making available to the United States

Forest Service Experiment Stations \$50,000 to be used to carry on investigations necessary for the intelligent and economical handling of the blister rust control work. The wisdom and economy of such an appropriation as a means of saving resources represented by these government owned forests is likewise urged upon the Budget Bureau and the United States Department of Agriculture.

6. Thanks for Efforts in Congress.

The Conference desires to express its cordial and sincere appreciation of the energetic efforts of the senators and representatives of the western states in Congress in furthering a program to protect and perpetuate our white and sugar pine forests through Federal appropriations for the white pine blister rust work in the West.

7. Blister rust Circular for the West.

The Conference suggests that it would be an assistance to the western campaign if some sort of circular discussing briefly the history of the work in the West and outlining the program for the future handling of the disease should be prepared by Federal blister rust workers to be distributed throughout this territory.

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BULLETIN ON WHITE PINE BLISTER RUST IN WESTERN
EUROPE STILL AVAILABLE.

Several thousand copies of Department Bulletin #1186 "White Pine Blister Rust in Western Europe" are still available for distribution. It is believed that all the workers in blister rust control should have a stock of this bulletin by Mr. Moir on hand for distribution to those who ask "What is blister rust doing in Europe?"

If you can use a supply of this bulletin, please write this office and state your needs.

R. G. Pierce.

The best gift; give of yourself.

ONE WAY TO REACH A MAN WHO WILL NOT BE SHOWN

A few days ago I made an appointment with Mr. Jones* of Enfield to look over his pine lots, three in number. I was to meet him at his house at 7:30, which I did. When I got there he said he would like to get two other men to go along if I did not mind. I told him the more the better so he called up the men on the phone and got a favorable reply from one, as he was interested. The other man whom he called said he could not go as he had to go away. (I had previously tried a number of times to get this man out but he never could go and really was not interested, even though he owned pine.)

We started out to pick up the man, Mr. Rhodes who said he would go, and on the way met the wife of the man who said he had to go away. Mr. Jones asked her where her husband was and what he was going to do. She said he was at home and would be all day. We then picked up Mr. Rhodes and called on the third party, Mr. Hughes. Messrs. Jones and Rhodes had planned a way to get him out. Mr. Rhodes went to the door and asked him to go out with him to see a man who lived near one of the lots which we were going to examine. He came out and got into the car. When he saw Mr. Jones and myself, his expression changed immediately. He made a few excuses for changing his mind about going away. To make a long story short, we looked over two lots and showed him all kinds of blister rust before he went back home, and I am certain that he feels entirely different about the matter.

This, I think, is one way to handle certain men whom it is hard to reach. Get some strong supporter to work with you and desired results are obtained where it is impossible to secure them alone.

G. F. Richardson, Jr.
Agent, H.H.

*The above names are fictitious.

UTILIZING THE BY-PRODUCTS OF THE ALBANY CONFERENCE

Mr. Pierce wrote up an account of the 12th Annual Blister Rust Conference held in Albany in December. I do not wish to supplement that article. However, any of the readers who were present at the Conference and who observed the exhibits will appreciate the work of taking down the exhibits and disposing of much of the material. You will remember that there were approximately 75 to 100 infected white pine trees, ranging from one foot to six feet in height on exhibit. We were at a loss just what to do with them, since the janitor at the Capitol refused to take them, saying that there was no way for him to dispose of the trees as there were no furnaces in the building and because the ash gatherers are under state contract and would refuse to take anything not within the contract.

I decided then to bundle the trees, fill the automobile with them, cart them out home and burn them in the yard. Soon after bundling a few, a middle aged woman employed in the Capitol came into the room and asked if she could have a Christmas Tree. "Most assuredly", we agreed, and when she went out she carried several trees with her. Word soon spread that the Conservation Commission "boys" were taking down the forestry exhibits and were "giving away" Christmas trees. Other young women and girls came in and soon most of the trees were gone.

The janitor was in the room during the distribution of the trees and his look of indignation was enough to knock me down. "Well I suppose the trees will come to me eventually to get rid of anyway", he uttered surrenderingly. Then two middle-aged women came in and got the remainder of the trees, though they inquired why it was that so many of them looked sick and brown, (the better ones having been picked out). One of the boys replied

that the trees were diseased with blister rust and that was what made them look brown. "My goodness, does that disease catch?" one of the women questioned. "If it does, I don't want the trees 'cause I got most of the diseases that come along.

We explained rather briefly about the blister rust and that the little trees were not in condition to spread the disease, so the women left, taking the trees with them. Christmas, every office on the second floor of the Capitol was adorned with a diseased white pine, but to those in the offices the trees were beautiful little Christmas trees.

Geo. E. Stevens, N. Y.

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BLISTER RUST EXHIBIT AT MOULTONBORO, N.H., FAIR

I had a small exhibit at Moultonboro Fair this year which, apparently, was much appreciated. The Fair was held jointly by the town and grange and gave a good opportunity to explain the town work to the people. In the evening I gave a talk on blister rust and the importance of control measures, telling them in whose woodlots infected trees were found.

S. H. Boomer, N. H.

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You can't accomplish what you can't imagine. The minute you say to yourself; "Oh, that isn't possible", it isn't possible - for you. But some other fellow who, with his mind's eye, sees the thing finished, will come along and do it. Creative thought is the greatest power in the world.

Jerome P. Fleishman.

STORY OF A GIANT PENNSYLVANIA PINE

Mr. J. W. Murphy of Coolspring, Jefferson County, Pa., recently told of his having cut Pennsylvania's biggest pine in the late 60's. The tree was felled on the McCreight lands between Reynoldsville and Sykesville in Jefferson County.

This giant pine measured 6 feet 4 inches across the stump. It was felled on a specially prepared bed of smaller trees that were previously felled to relieve the shock of the big tree and prevent its trunk from breaking into pieces when it crashed to the ground.

Mr. Murphy relates that it took a full day of hard work for himself and his uncle, John McCreight, to bring this forest giant down and saw off the butt and the top. The main part of the stem was cut into a 50-foot log. This log was hewed and when squared it measured 40 in. x 45 in. on the face and contained 650 cubic feet. To load one end on a bob-sled required six men and three teams, and seven yoke of oxen were required to drag it to the landing on the back of Sandy Creek.

Mr. Murphy remembers that he sold this forest giant delivered at the rafting place to Bob Cathers at 13 cents a foot. Even in the early lumbering days he received the magnificent sum of \$84.50 for this single stem. Mr. Cathers rafted this giant "tooth-pick" to Cincinnati, and sold it to a mill man who kept an accurate record of the material sawed from it. He in turn sold the products for \$300, a sum equal to the price paid for the 10 acres of original forest land on which the tree grew.

Mr. Murphy in a recent interview said: "It is difficult for the present generation to realize the enormous forest wealth that Mother Nature had stored up on the hills of Pennsylvania, many of which are now bare and barren".

WHITE PINE IN MICHIGAN PLANTATION MAKES GOOD GROWTH

Professor A. K. Chittenden in his article "Thinning a White Pine Plantation" noted under Publications, has written up the white pine plantation made by the Michigan Agricultural College at East Lansing in 1891. A study of the size of the trees, both diameter and height, and the volume per acre in long cords has been made and is shown in the following table

TABLE 1 - RATE OF GROWTH PER ACRE OF PINE PLANTATION

Date	Total age years	Number of trees per acre	Diameter of average tree, inches	Height of average tree, ft.	Volume per acre long cords	Mean annual growth per acre, long cords since 1896
1916	25	399	7.17	34.4	17.7	.70
1921	30	387	8.00	45.3	30.5	1.01
1925	34	381	8.70	54.0	42.8	1.26

A comparison of the growth recorded in the above plantation at East Lansing, Michigan, with the growth recorded in Frothingham's Department Bulletin "White Pine Under Forest Management", would seem to be worth while. The following figures taken from this bulletin are based upon the measurements of 196 typical fully stocked second-growth stands in southern New Hampshire:

Site	Quality	Age	Average ht. dominant trees	Diameter B.H. of average tree	No of trees per acre
1		35	53	7.5	710
2		35	44 $\frac{1}{2}$	6.1	950

R. G. Pierce.

P E R S O N A L

Mr. O. C. Anderson, State Leader in Rhode Island, resigned from Blister Rust Control on December 31, 1926, on account of poor health.

Mrs. Florence LaCovey of the Washington Office, who resigned on January 15 will be greatly missed by her associates. Mrs. LaCovey came into the Office on October 9, 1920 and has been a very faithful co-worker.

Agent G. Stanley Doore's headquarters will be changed from Greenfield, Massachusetts to Boston, effective January 15, 1927.

Raymond H. Bitney, field assistant, headquarters Spokane, Washington, resigned December 15, 1926.

Mr. Ezra Hornibrook, headquarters Corvallis, Oregon, who worked with Blister Rust Control in 1924 and 1926 resigned December 23, 1926.

Miss Mary J. Francis, Clerk-stenographer, has been transferred from Mr. Allanson's office to the Washington Office of Blister Rust Control.

Mr. Philip Brierley who worked for the Office of Blister Rust Control in 1920 and 1921, was married on December 18, 1926 to Miss Myrtle Shireman of Nebraska.

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Mrs. Mary L. Reiff has been appointed personnel clerk in the Washington Office of Blister Rust Control. Mrs. Reiff will take the place of Mrs. Florence LaCovey who resigned January 15, 1927.

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Mr. Alonzo Brooks, Buchannon, W. Va. a collaborator of this office, resigned December 31, 1926.

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Mr. Marvin C. Riley was transferred as Junior Forester from the Forest Service to the Office of Blister Rust Control on January 15, 1927, headquarters, Spokane, Washington.

- - - - -

Mr. J. A. Churchill, Salem, Oregon, who was with the Office of Blister Rust Control as collaborator, resigned December 31, 1926.

- - - - -

Miss Sarah E. Russum, Boise, Idaho, collaborator, resigned December 31, 1926.

P U B L I C A T I O N S

Anon

Blister Rust Meeting (at Albany, N. Y). American Forests and Forest Life, January 1927, page 53.

Blister Rust

Jardine, W. H. White Pine Blister Rust. Report of the Secretary of Agriculture to the President, Nove. 1, 1926, pages 72-74.

Edit: This report summarizes the blister rust situation in the west and east up to the end of 1925.

Olson, D. S. - Eastern White Pine Moves West. American Forests and Forest Life, January, 1927, page 36.

Taylor, W. A. - Campaigns Against Plant Diseases. Paragraph on White Pine Blister Rust in Report of the Chief of the Bureau of Plant Industry for the fiscal year ending June 30, 1926. August 31, 1926, pages 2 and 3.

White Pine

Chittenden, A. K. - Thinning a White Pine Plantation. Michigan Quarterly Bulletin, Michigan Agricultural Experiment Station, Oct. 1926, pages 142-145.

Martin, J. F. - White Pine Blister Rust in the Middle Atlantic and Lake States. In Diseases of Forest and Shade Trees, Ornamental and Miscellaneous Plants in the United States in 1925. The Plant Disease Reporter. U. S. Bureau of Plant Industry, U. S. Department of Agriculture. December 1, 1926.

Possey, G. B. - White Pine Blister Rust in the West. In Diseases of Forest and Shade Trees, Ornamental and Miscellaneous Plants in the United States in 1925. The Plant Disease Reporter. U. S. Bureau of Plant Industry, U. S. Department of Agriculture, December 1, 1926.

BLISTER RUST NEWS



February 1927.

Volume XI

Number 2.

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control



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Thos. J. King	" " - New Hampshire
S. V. Holden	" " - Vermont
W. J. Endersbee	" " - Massachusetts
J. E. Riley	" " - Connecticut
George H. Stevens	" " - New York
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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS
Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 11. No. 2.

FEBRUARY 1927

ASPEN AND PINE

The aspen has its beauty, and yet no roofs arise
Because an aspen's splendor is etched against the skies.
Besidessome woodland pathway the aspen lifts its crown,
But not an aspen shelters the children of the town.

Well, there's a need for aspen, but there's a need for pine,
And there is many a mortal whose lot is poor as mine.
Yet let us do the little, and labor nothing loth;
Though other men are greater, God knows God reads us both.

Another paints the picture upon the cottage wall;
Though I but nail the studding, that's something, after all.
The artisan and artist both serve ~~some~~ use divine---
Well, there's a need for aspen, but there's a need for pine.

American Lumberman Poet.

VERY OLD INFECTION FOUND AT WOOLWICH, MAINE

Mr. E. E. Tarbox, agent in southeastern Maine, in the following letter written under date of February 3, 1927, tells of an important discovery:

"Found an infection area this morning in Woolwich (Sagadahoc Co.) which must be nearly, if not as old, as Kittery.

"The old gentleman, who formerly lived on the place, has been dead eleven years. When he was alive he had a large planting of black and red currants, etc. There are only a few reds left now. Directly over the wall are large pine severely infected, and some trees dead.

"I have been back in the woods at least a half mile, finding many trunk infections on 30-year pine. Infection is very heavy in this county and in one town at least I estimate from 10 to 20 per cent of the young pine is infected. I have also found cankers in fifty-foot pine which apparently dates back to 1905. The infection which I found this morning is that old, I should say, if not even older."

E. E. Tarbox, Maine.

Edit:- Tarbox must have a good pair of snow shoes to be able to locate such an infection area as the one just found in Woolwich. The infection is 75 miles as the crow flies from Kittery Point, where the rust was probably present as early as 1897.

SUGGESTIONS FOR A BLISTER RUST ENTERTAINMENT

Agent Brockway of Plymouth County, Massachusetts, has made the following suggestion for an evening with blister rust. He writes:

"Some of the Agents were speaking about coloring films and I am wondering if it wouldn't be a good idea to run off colored lantern slides first, and at the same time give a lecture, then follow up with a film."

For the new film he suggests that it have a plot with human interest, somewhat similar to that of "The Pines".

DEFOLIATED SKUNK CURRANTS IN NORTHERN ROCKINGHAM COUNTY, N.H.

In the Season of 1926

While doing eradication work in Northern Rockingham County one is confronted by problems and conditions which differ greatly from those found nearer the coast.

In the section of which I speak, the *Ribes glandulosum* or Skunk Currant, is most commonly found. These bushes not only grow in the swampy places as do the other species but are also found scattered among the ledges and the gravelly soil of the hillsides. They become defoliated much earlier in the season than do gooseberries or red currants, making efficient eradication very difficult.

Weather conditions, no doubt have been responsible for many of the leafless bushes found this season. There has been very little rain in the upper half of the county and all plants show the effects of the dry season. The currants being plants that need a great deal of moisture to thrive properly are very badly affected. Bushes were found early in August with leaves having the coloring of autumn. These drop from the stalks very easily, and a high wind or sudden shower leaves the *Ribes* practically leafless.

In the low land the Skunk Currants are attacked by a small green currant worm that feeds upon the leaf tissues. In the town of Northwood a great many *Ribes* were found almost completely defoliated by these worms. In many cases the leaves were eaten through in hundreds of places giving the plants a lacey appearance. Other *Ribes* were found where only the very largest of the leaf ribs remained clinging to the stalks.

A leaf disease similar to the *Puccinia* found on gooseberries attacks the skunk currants in the very wet swamps. This is seen on the leaves in the form of a brown spot such as would be left by a burn.

When the Ribes become infected with this disease the leaves dry on the stalks giving the bush the appearance of having been killed by the frost.

There is also another cause for many dead and defoliated Ribes in the hilly section of the county. This is a fungus that is found mostly on the stems of the leaves. In general appearance it is similar to Woolly Aphis, but upon closer inspection is seen to be a great number of very small sacs attached to the stems by tiny tubes. The disease seems to affect only that part of the plant which is above the ground as many bushes have been found apparently killed by this fungus that have later sprouted from the roots.

Leafless bushes are very easily missed by the men in line as they can only be distinguished from the other undergrowth by the color of the bark and a small green bud at the tip of the stalk. In some cases these buds have broken and the Ribes have new leaves, nevertheless in this condition the bushes are very difficult to see at any great distance. To do efficient work under these conditions the work must be checked and rechecked a number of times. As this takes a great deal of time the speed of the whole project is greatly impaired.

George L. Chase
Blister Rust Control Foreman

SUCCESSFUL ERADICATION SEASON IN MERRIMACK COUNTY (N.H.)

Another successful season in White Pine Blister Rust Control has just terminated in Merrimack County. The splendid cooperation of the various towns of the county at the last Town Meeting made this possible. Nineteen towns and cities appropriated \$8,825.00 at that time. This sum was increased by 25 per cent by the New Hampshire Forestry Department, making a total of \$11,031.25 available for 1926 work. The number of bushes destroyed, together with the amount of infection found on pine, bears out, in full measure, previous statements as to the necessity of continuing control work and pushing it forward as fast as possible until all necessary work is completed.

Blister Rust infection on pine was found generally throughout all the areas worked, not a single pine area worked, being free from the disease. The disease was most heavily distributed in the towns of Allenstown, Epsom, Chichester, Bradford, Warner, Sutton, Webster, Northfield and Pembroke.

Cooperative work between towns and the State Forestry Department has been going on since 1919. During the period 1919-1926, 331,132 acres have been examined in Merrimack County, 5,007,088 currant and gooseberry bushes destroyed at an average cost of 18.6 cents per acre.

Extract from "The Merrimack County Farmer's Bulletin"
December, 1926. Vol. XII. No. 12.

Edit:- I notice that Tom King's picture appeared on the front page of the Merrimack County Farmer's Bulletin.

CLARK OF CONNECTICUT BROADCASTS ON BLISTER RUST

Arrangements have been made for a talk on the White Pine Blister Rust Disease to be given by Ernest D. Clark, Blister Rust Control Agent for Northwestern Connecticut, on February 14, at 7 p.m. from Station WTIC, Travelers Insurance Company, Hartford.

From Litchfield Enquirer.

CLIFFORD R. PETTIS

A Tribute to the Pioneer in Blister Rust Control.

Clifford R. Pettis has passed to the Great Beyond. In the Adirondack Forest Preserve he sleeps peacefully, surrounded by the forests he protected. A few miles distant is the grave of John Brown, and like John Brown, the soul of Clifford Pettis goes marching on. For twenty-five years he has been a leader in forest conservation.

In 1902, as one of the first graduates of the Cornell Forest School, Pettis established the first State-owned forest nursery in America. At that time the high price of forest planting stock was a bar to the reforestation movement. Through his initiative, energy and sound common sense he solved the difficult problem of producing vigorous, low-priced planting stock, then thought to be impossible under American conditions.

Pettis ranked as a leading authority on forest planting and nursery practice. Throughout his career, his concern for the forest nurseries and forest planting in New York State was that of father for child. He took just pride in the fact that New York has the largest forest nursery in the world, and that the State leads all others in forest planting activities.

Pettis loved the little trees, for love is the only word which can convey his intense devotion to the welfare of the State nurseries and forest planting. He was also a staunch friend of white pine, and this species has always constituted the leading species in the New York reforestation program. Therefore, in 1909, when he found the first white pines infected with blister rust in a shipment of forest planting stock

from Germany, he took immediate action to stamp out the disease.

It is characteristic of the man that his first thought was not of New York alone, but of the welfare of American forestry. Pettis' first move was to wire Dr. Spaulding, at Washington, asking him to come to New York to identify the disease. Then, through Pettis' initiative, Commissioner Whipple of the New York Conservation Commission, wired other State foresters and representatives of the Office of Forest Pathology, notifying them of the discovery and calling an immediate conference in New York City.

This meeting was the first blister rust conference in the United States. From that time forward, Pettis never ceased to vigorously apply the most effective known measures to eradicate the rust. In 1915, when it was found that the rust had escaped to native pine stands in Massachusetts and New Hampshire, he joined the foresters of other Eastern States in a second blister rust conference at which plans were made for meeting the situation. His clear vision, forceful personality and faith in the supremacy of white pine as a tree for forestry purposes made him a tower of strength in the movement to develop and apply sound blister rust control practices.

At the third blister rust conference, held in Albany in November, 1916, it was Pettis' faith that won the day for the present blister rust control program. At that time few believed it possible to eradicate currant and gooseberry bushes from the forest on an extensive scale. All that was then known was that the rust was widespread in New England and New York, and had been found in the Lake States, Pennsylvania and New Jersey. Hope of eradicating the disease in New York and New England was past. With the chestnut blight disaster fresh in mind, the outlook for any practicable plan of dealing with the blister rust was gloomy indeed. Pettis crystallized the sentiment of the meeting when he said: "We cannot give up white pine; we must find a way to save it."

It was Pettis, also, who was among the first to point out the lesson from blister rust and chestnut blight. He voiced his conviction that the time had come to close the doors to further importations of foreign plant pests. Along with such leaders as Reynolds, ^{Metcalf,} Hirst, Filley, Sanders, Freeman and others, he supported the movement which resulted in Federal Plant Quarantine No. 37 being established, and he rightly regarded this measure as one of the greatest forest conservation measures ever taken in this country.

Pettis was a leader in all lines of forest conservation. He was largely instrumental in developing the Adirondack forest preserve. He was a pioneer in recreational use of the forests and made notable contributions in this field. He organized the forest fire control work of New York, and was placed in charge of the campaign by which the gipsy moth invasion of New York is to be checked if humanly possible. He was also in charge of plans for reconstructing forest conditions on the Saratoga battlefield as they were at the time of the battle.

No better illustration of Pettis' breadth of vision can be given than his vigorous and successful effort in organizing in the Conservation Commission a Division of Forest Pathology and a Division of Forest Entomology comparable to the Division of Forest Fire Control. He saw that in forest management of the future, the control of fungous diseases and insects will be far more difficult and pressing problems than control of forest fire. One of his last acts was to advise the Federal Horticultural Board that the "Woodgate rust" of Scotch pine is established in New York, and that measures should be taken to prevent infected Scotch pine stock being shipped out of New York into other States.

Clifford R. Pettis was a forceful leader. He combined broad vision, sincerity of purpose, high ideals and sound judgment with ability to quickly grasp fundamental principles. A man of action, he knew how to instill loyalty

and obtain the best effort from his fellow workers. His name will never be forgotten in the history of forestry in the United States. His heart was in this great movement, and all of his friends and associates in this cause mourn his passing.

February 15, 1927.

S. B. Detwiler

Note: - The following address was delivered by Mr. Pettis at the conference called at Washington, D. C., by the American Forestry Association on January 18 and 19, 1917, to discuss ways and means of fighting the white pine blister rust. It is appropriate to reprint this address as published in American Forestry. The fact that Mr. Pettis believed in the soundness of the present blister rust control program is evidenced by the fact that in 1925 the New York State nurseries contained a total of 90 million trees, of which 40 per cent were white pine. - S.B.D.

SHALL WE PLANT WHITE PINE?

By C. R. Pettis, Superintendent State Forests, State of New York

As an economic necessity and in the application of true conservation and practical forestry, the wisdom of reforesting cannot be questioned. There are millions of acres of our soil whose productive use can best be and, to a large extent, can only be realized by using them to grow wood crops. This vast territory stands to-day idle. To become productive, it must first be reforested. In order to derive the full measure of use a tree adapted to grow under the prevailing condition must be selected.

White pine has no equal in meeting and measuring up to the specifications of a tree that can be most profitably employed in reforesting generally in the northeastern United States. We cannot make many mistakes when we use white pine as an agent for employing the resources of nature in obtaining the productive capacity of these non-agricultural lands.

In the market, white pine is in great demand and on account of its qualities has a wider range of uses than any other wood we can grow. It is our most commonly-used tree. Go into nearly any line and study its great variety of uses. It measures up to our demands for a wood for general purposes.

White pine is to forestry in the northeastern states what wheat is to agriculture; what iron is to manufacturing or what coal is to transportation.

I have tried to state briefly why we must reforest and what an important factor white pine is in the future planting operations. We must have white pine for planting.

In answer to the question "shall we plant white pine?" I most emphatically say, yes. We must have white pine. We will obtain our chief future supply from plantations.

We to-day face a problem. We do not know all about the distribution of the blister disease, and as reforesting deals in future, we should defer further white pine planting until we know where it is safe and sane to plant. We must first make the unsafe places safe and expend every energy toward the control of this disease. We must plant but should defer it for a while.

We are gathered here to repent for haste. Our various forestry departments, associations, land owners and others about 1908 became enthusiastic about planting. The necessary trees could not be obtained in this country at a reasonable price and, as a result, large quantities were imported and scattered in a thousand places. Unfortunately, some of these trees were diseased and we now must decide what we are going to do about what President Pack so well calls "A Bandit from Abroad."

Let us take a lesson from some of these many unfortunate circumstances. Why not meet the situation frankly? We must stop the spread of this disease. It can only be accomplished through eradication and control measures. We cannot fairly ask the farmer to give up all his currants and gooseberries that the forester may utilize his soil for growing pine. We must both of us make sacrifices. In places, pines will have to be removed as part of the control plan. We cannot now say where the immune strips are to be placed. The extension of white pine planting, under present conditions, may further the spread of the disease as well as make the control measure more difficult. The problem is difficult enough to-day as it exists.

A few years more of idleness of these soils is nothing in comparison to the future safety of white pine. We have not gained but rather lost through past haste. Wait until we first fully know where "we are at."

A study to ascertain the extent of the disease, location of different kinds of soil, also distribution of pine, currants and gooseberries, will add so materially to our knowledge that future plans can then be formulated.

For the time being, we should expend our energies in field investigations, control work and education of the public.

The general progress of reforesting need not be seriously interfered with because we may direct our energies to planting lands not best adapted to white pine with suitable species.

AMERICAN FORESTRY, February 1917, Vol. 23, No. 278, pp. 71-72.

PRESENT WHITE PINE PLANTING POLICY IN NEW YORK

Extract from the Eighth Annual Report of the Conservation Commission
for the year 1918.

Two years ago, when the white pine blister rust was discovered in unexpected localities, it was felt that we should stop sowing white pine seed in our nurseries until such a time as more complete facts were available in regard to the spread of this disease and means of its control. The fact that white pine seeds were not sown has not yet seriously hindered our reforestation work, for the reason that we had in our nurseries upwards of 12,640,510 white pines of all ages, and, therefore, had a problem on our hands as to how to use this stock without loss. We have restricted the sale of white pine to private owners, and they have felt indifferent about purchasing them, because, in all cases, we have fully advised the prospective planter of all the information which we had on the subject. We have sold white pine trees to people who already had white pine plantations, for the reason that we felt that the extension of an existing plantation was no serious matter, because, if the owner had to take means to control the disease and he wanted to practise such control on a slightly larger area, it was not a hardship.

During the last two years, extensive experiments and research have been conducted both by this Commission and in cooperation with the U. S. Bureau of Plant Industry, and, as a result, it is the consensus of opinion of foresters and pathologists that, under certain conditions, the extension of white pine plantations may be carried on. The conditions are:

First. That the stock which is to be planted shall be absolutely free from any disease.

Second. That the plantation be made on an area on which there are no currant or gooseberry bushes.

Third. That there be an immune zone of 500 yards around the plantation, which is free of Ribes.

This plan has been carried out during the past two years. We have selected sites on State land where such eradication could be conducted at a minimum expense, and where the lands were adapted to planting this stock, and have conducted our reforestation with white pine in those places.

On account of the consensus of opinion in regard to future use of white pine, we are preparing to resume sowing white pine in our nurseries the coming spring. * * * * *

C. R. Pettis.

NEW YORK SELLS WHITE PINE PLANTING STOCK ONLY WHEN PURCHASER
AGREES TO DESTROY RIBES

The tree order blank of the New York Conservation Commission reads as follows:

The undersigned hereby applies for the following number and kinds of trees for planting in the Town of _____, County of _____, State of New York.

In consideration of granting this application for trees at the price stated, the undersigned hereby agrees:-

1. To pay the purchase price of the trees to said Conservation Commission within ten days after the granting of this application.
2. That the trees hereby sold shall be used by the undersigned for the sole purpose of reforesting lands within the State of New York.
3. That the said trees shall not be sold, offered for sale, or given away by the said applicant, or his agents, to any person.
4. That the said trees shall be planted in accordance with instructions furnished by the Conservation Commission.
5. That the applicant furnish the Conservation Commission from time to time when asked for, reports in regard to the condition of said plantings.
6. That the empty baskets and crates shall be returned to nursery from which trees were received and that purchaser pay for baskets or crates not returned.
7. The purchaser further agrees to assume all responsibility for the protection of white pine trees from the white pine blister rust and hereby agrees to remove all wild and cultivated currant and gooseberry bushes from any area to be planted to white pine and from the land for a distance of at least 500 feet surrounding the plantation. All species of currants and gooseberries are to be removed, as herein provided, prior to the first of the next June following the date of planting.
8. It is understood that reforesting means the establishment of a forest by completely planting an area or by supplementing natural forest cover by filling in open spaces or underplanting. In no case will the trees be used for ornamental purposes but will be planted directly upon the land where a forest is to be established.

BLISTER RUST IN DANBURY AND WILMOT, N. H. RAPIDLY SPREADING

This is the heading of a three-quarter page article by Agent King which appears in the January number of the Merrimack Co. (N.H.) Farmers' Bulletin.

"Recent examinations of pine lots in the towns of Danbury and Wilmot have revealed the fact that the White Pine Blister Rust is firmly established there. Blister Rust infection on the pines was quite readily found. In a good many instances it was possible to learn the names of the owners on whose pines the disease was found."

The names of 40 pine owners, upon whose land the blister rust was found, are listed.

"By co-operating with the New Hampshire Forestry Department, funds are made available for the purpose of undertaking this work on a town-wide basis. This has proven the most effective method in New Hampshire. Town Meeting gives the townspeople an opportunity to express themselves on the question of the town's co-operation. Failure to cooperate in the past has permitted the disease to become so well established. Failure in the future will permit an unlimited spread of the disease with a correspondingly large loss. Failure to do anything in the past was, undoubtedly, due to a lack of understanding of the disease and its far reaching possibilities. With a definite knowledge of existing conditions and the dangers that lie therein, neither these towns, nor any pine growing town in the state, can afford to allow this matter to drift along. The machinery for accomplishing it is at hand. It simply needs the impetus which the townspeople can give it at their annual town meeting.

"Studies of Blister Rust infections in pine lots has disclosed the very important fact that the disease has spread rapidly during the past five or six years. Now is the time to check its further spread if the control work is to be most effective.

"There are but three towns in Merrimack County in which control work has never been carried on. It is our ambition to see that 1927 shows these three towns joining with the others in this most important work.

"Money obtained from the cutting of white pine lots has in the past formed the foundation of rural fortunes, paid mortgages, educated children, aided in the improvement of the farm home, been used to add machinery to the farm equipment, paid from one-fifth to one-half of the town's running expenses, made easy and freed from worry the declining years of our rural elders, and it can still continue to do so if given the opportunity. To allow White Pine Blister Rust to reduce this income materially, as it can, especially in view of the fact that the disease can be controlled, isn't very good business. Is it?"

SUGAR PINE IN YOSEMITE NATIONAL PARK

In response to a request for information concerning five-leafed pine in Yosemite National Park, Mr. W. B. Lewis, Superintendent, advised as follows:

"There are in the Yosemite Park, about 100,000 acres of land, extending along the entire western boundary, that will average about 10,000 feet board measure of Sugar Pine timber, or a total of one billion feet board measure.

"There are also in the park, about 10,000 acres with approximately 150 million feet of Sugar Pine timber that are held in private ownership. About 200 million feet of Sugar Pine timber has already been cut from about 15,000 acres of patented lands in the park."

STATUS OF BLISTER RUST INFECTION IN MASSACHUSETTS

Infection upon white pine has been found to date (December 31, 1926) in 210 of the 355 cities and towns in the Commonwealth. Of this number of records, 23 were added during the year 1926.

More centers of infection were noted during the year than in any previous season, and in several districts, it has been possible to find infected pine on the land of practically every cooperator.

The production of aeciospores was unusually heavy and in spite of the prevalence of dry conditions throughout the season, infection on Ribes was general.

The following statements summarize, though inadequately, the general conditions in each of the blister rust districts:

District I

Essex County Infection in this district situated in the north - eastern part of the State is very general indeed, with areas of intensive local infection in the towns of Ipswich, Manchester, Newburyport, North Andover, and Topsfield.

34 townships
31 infected

District II

Middlesex County Control work in Middlesex County has not advanced sufficiently to permit of an accurate estimate of conditions. Thus far, infection on pine has been distinctly "spot".

54 townships
18 infected

District III

Plymouth County In Plymouth County, infection is general throughout the county. Areas of very heavy infection are present in the towns of Duxbury, Hingham, and Pembroke. One new infection area located in Hingham, shows nearly 90% of the pines on a small area very badly diseased.

27 townships
26 infected

Norfolk County	No intensive work has been done in this part of
28 townships	District III. Infection appears to be generally
17 infected	distributed however, in the towns where a limited
	amount of work has already been done.
<u>District IV</u>	No extensive areas of infection on pine have been
Bristol County	noted in this county although spot infections are
20 townships	quite readily located.
16 infected	
Barnstable County	Records for this section are wholly inadequate to
15 townships	justify any statement as to conditions. It has
2 infected	been assumed that white pine as a forest tree in
	this section of the state, is unimportant. This
	statement might be challenged.
<u>District V</u>	The agent in charge of work in this district re-
Worcester(S)County	ports that there are few areas of pine in the dis-
37 townships	trict that are uninfected. He also believes that
13 infected	the section may become the largest single infection
	area in the country.
<u>District VI</u>	The disease is generally distributed in this dis-
Worcester(N)County	trict, but largely as spot infections and on rela-
24 townships	tively small sized trees. Groups of infected trees
15 infected	are to be found in Ashburnham, Petersham, Phillip-
	ston, and Princeton.
<u>District VII</u>	Infection is very generally present in the towns in the
Franklin County	western part of Franklin County. Areas of serious
26 townships	damage to pine are present in Shelburne, Conway, and
21 infected	Charlemont.
Hampshire(N)County	Very little work has been done in this county. Infection
11 townships	is present in the towns visited in the western section.
7 infected	

District VIII

Hamden County

23 townships
14 infected

Hampshire (S) County Only a limited amount of work has been done in the

12 townships towns in this part of the district. Small areas of
8 infected very intense infection are found in Worthington and
Huntington.

District IX

Berkshire County

32 townships Infection is generally distributed in the towns in
22 infected the southern half of the county. Pine is not parti-
cularly abundant in the northern half and no scouting
has been undertaken in that section.

Extract from the Massachusetts Annual Report
for 1926. C. C. Perry, State Leader.

FEDERAL POLICY IN BLISTER RUST CONTROL

The special attention of the Blister Rust Control State Leaders and Agents is directed to an article by Mr. E. C. Filler on "Federal Policy in Blister Rust Control," which appeared in the Report of the Proceedings of the 8th Annual Blister Rust Conference held in Boston, February 8-10, 1923, pages 37-41, and to a paragraph on forestry in Mr. Detwiler's article, which appeared on page 12 of the Report of the Proceedings of the 9th Annual Blister Rust Conference held at Boston, February 18-19, 1924.

Mr. Detwiler called particular attention to these articles at the Conference held in Albany last December. It has been suggested that it would be advisable for the Blister Rust Control employees to read these articles at this time. If you do not have these Reports in your files, please write the Washington Office for them.

R. G. Pierce.

SIXTH ANNUAL BLISTER RUST CONFERENCE
OF THE WESTERN STATES

The sixth annual Blister Rust Conference was held at Portland, Oregon, on December 4th. There was considerably larger attendance this year than for the last two years, indicating the wider interest and attention that is being given this problem. All who attended were vitally interested in the meeting so that very careful attention was given to all of the papers. The following notes cover the principal points of interest.

* * *

The executive secretary stated that \$507,000.00 had thus far been appropriated for blister rust work in the West and that probably \$260,000.00 would be available for the fiscal year 1928. States in the meantime, while not actually appropriating considerable sums for blister rust work, have, through their forestry, horticultural and agricultural departments contributed large sums in the form of service. Private agencies have taken similar action. The secretary called special attention to the fact that the moneys spent by state and private agencies during this period exceeded that spent by the Federal government.

* * *

The discussion of control areas from the standpoint of quarantine, and of local control areas from the standpoint of eradication was probably the most important matter that was discussed. The basis of the discussion was regarding the need for more research work along the line of growth and yield studies and site studies, in order that some definite basis might be established, for estimating the values involved at present and in the future, in the case of each area which is being classified regarding protection from blister rust. This basic classification, it was agreed, was the duty of the forester. Foresters

called attention to the fact that very little of such information was available and that there was no money available for carrying on such research work. As a result the conference asked Congress to appropriate \$50,000 for starting this work.

* * *

There was a general feeling at the conference that not enough publicity was being given to the blister rust work. As a result the conference recommended that its executive committee prepare an article reviewing all of the work in the West from its beginning. This article will appear in the January number of the "Timberman".

* * *

Mr. Wyckoff stated that this last year's work had given greater encouragement in the possibility of the success of the work, than the work of any previous year had given. He gave two reasons for this. First, the fact that the average cost of eradication had been reduced from \$3.38 per acre to \$1.26 per acre. Second, that chemical eradication appeared practical in destroying the concentrations of Ribes along streams.

* * *

Extracts from a wire from Mr. Detwiler to the conference:

"The outlook for the successful control of blister rust in the West is brighter than ever before as a result of this year's work..... I am confident that the successful application of control will result from following the ten year program. The strength of the program is whole-hearted cooperation of all interested in the future of white pine in the West. Since the Federal government owns approximately half of the white pine acreage, its duty in this problem is possibly greater than that of the states which actually own comparatively small acreage. However, the communities and states are greatly benefitted in wealth by lumbering operations..... I believe that the time has arrived for

the states to secure direct appropriations for control reconnaissance, scouting and Ribes eradication on the most favorable sites."

C. R. Stillinger, Wash.

BLISTER RUST IN OREGON

White pine blister rust reached Oregon in 1925, being found at Wheeler and Pacific City in Tillamook County and on Gnat Creek near Knappa in Clatsop County. At Pacific City it was found on cultivated black currants and at other points on wild currants. It is supposed the spores blew into Oregon from infected white pines on the Olympic Peninsula in Washington as this is the closest known point of infection.

During the season of 1926 the Bureau of Plant Industry had a number of men in Oregon scouting for the rust, but no additional infection was found. This does not indicate that there is no rust here nor that it will not spread to the white pines of Oregon. Pathologists are emphatic in their statements that sooner or later the rust will reach the white pines of Oregon and then it will be necessary to fight it by local control measures.

Two isolated stands of white pine in Western Oregon form a link for transmission of the disease to the large white and sugar pine stands of the Cascades and Southern Oregon and Northern California. Through increased federal appropriations, it will be possible to undertake more intensive control measures and hence retard the spread of the disease to Oregon five-leafed pines.

Extract from 16th Annual Report of the
Oregon State Forester to the Governor.
December 31, 1926.

OBSERVATIONS ON WHITE PINE BLISTER RUST IN GREAT BRITAIN
AND DENMARK

By J. S. Boyce, Office of Forest Pathology

(Continued from January Number)

* * *

The Rust in Denmark

The state forest of Almindingen comprises approximately 6,200 acres, in the central portion of the Island of Bornholm, a small, roughly circular island about 15 miles across, lying in the Baltic Sea about 100 miles east of Copenhagen. This place was visited by Moir* in May, 1920, and by Spaulding# in October, 1922, both of whom have given a brief account of conditions then. Eastern White Pine, planted throughout the forest, both pure and in mixture with other conifers, has been practically ruined by blister rust and when seen by the writer in September, 1925, presented a depressing picture.

In the several compartments examined the white pines ranged from 3 to 14 inches diameter breast-high. Large numbers of trees have been killed and nearly all the living trees were infected, though occasional individuals apparently had escaped completely. All sizes were dying slowly but steadily, the death rate being slower than the earlier stage of the infection, since most of the small trees with cankers low on the trunk had been killed already. Many of the larger ones so infected were still living. Trees were very common with tops or even the entire crown broken off at cankers on the bole.

Stem cankers, abundant from butt to top, were indicated sometimes by distortion of the bole, but always by heavy resin flow. The dirty, black character of the bark or its dark green color due to a profuse growth of Algae made the cankers more difficult to detect. A few twig infections were producing pycnia, others showing pycnial scars, and most of them had the characteristic yellowish-green discoloration of the bark at the youngest part of the canker except where this was obscured by the discoloration mentioned above.

Conditions are most favorable for blister rust, the relative humidity being high throughout the year, rainfall abundant at all seasons, and the winters mild. In addition, the low-lying, set sites occupied by most of the white pine plantations are unfavorable to the tree species and favorable to a high degree to the parasite. Apparently heavy infection occurs periodically and not yearly. Evidently such a wave of infection swept over the forest some years ago and the yearly infection since has been very light, the most recent cankers found being on 1920-1921 wood at the nodes. The white pines remaining were of low quality in all plots, because the stands have been so heavily thinned by blister rust that height growth has been reduced and the trees have not self-pruned. However, this is not of paramount importance since all but a very few trees will be killed before attaining maturity.

One noticeable point in this infection was the relatively few branch cankers in comparison to stem cankers. At Daisy Lake in British Columbia,-- which place shares with this locality the doubtful honor of being one of the two worst examples of damage by blister rust now known,-- the trees have enormous numbers of branch cankers, with very few stem cankers. At Daisy Lake, western white pine (Pinus monticola Dougl.) is the species attacked, while at Almindingen, eastern white pine is the victim. The writer's limited observations in New England also indicated relatively few branch cankers on eastern white pine.

During a three-day search no wild currants or gooseberries were found. The gardens of the small farms scattered throughout the forest and, in fact, all over the island, each contained a few European black currants, red currants, and often gooseberries. The black currants were heavily infected wherever examined but no rust was found on the red currants and gooseberries. Evidently black currants alone are responsible for the pine infection in this forest. The most striking facts were the relatively small number of black currant

bushes causing the heavy infection and the lack of significant difference in degree of infection between white pine stands 300 feet and those 3,300 feet from black currants. How much farther the disease might have spread from currant to pine can not be told, since no pine stands were found at a greater distance than the last-named figure. Conditions in this forest afford the most convincing proof of the terrific damaging power of the cultivated black currant. This currant can not be tolerated in a region where white pines are to be grown.

Jour. of Forestry, Dec. 1926. Vol. 24. No. 8

* Moir, W. Stuart. 1924. White pine blister rust in western Europe. U. S. Department of Agriculture Bulletin No. 1186, 31 p., 15 fig., February 8.

Spaulding Perley. 1925. Notes upon the white pine blister rust in Europe and upon conditions affecting its status there. Unpublished manuscript, 100 p., Office of Forest Pathology, U. S. Department of Agriculture, July 29.

SUSCEPTIBILITY OF INLAND EMPIRE RIBES

Over 2,000 plants of R. petiolare, R. viscosissimum, R. lacustre and G. inermis were tested out in five different localities during this last summer by the Office of Forest Pathology. It was found that there was a decided difference among the species in their susceptibility to aeciospores as compared with their susceptibility to uredinial intensification. Compared with the cultivated black currant, all are evidently low in the former regard. Uredinial intensification and production of the telial stage was so heavy on R. petiolare and G. inermis, particularly on the former, that it is felt that in transmitting infection to the pines they will occupy a position almost comparable to the cultivated black currant.

Extract from Western News Letter.

MACEDONIAN WHITE PINE IN AMERICA

The Macedonian white pine, Pinus peuce, is one of the five-needled or five-leaved pines which is rarely seen in the United States. Mr. Kenneth R. Boynton in the September 1925 issue of *Addisonia* has a short article on this pine and a colored plate. He writes:

"Of the soft or five-leaved pines perhaps nine are hardy in the New York region. Besides our own white pine, the Pinetum of the New York Botanical Garden contains the Himalayan white pine, *Pinus excelsa*, the Japanese white pine, *Pinus parviflora*, the Western white pine, *Pinus monticola*, the Swiss stone pine, *Pinus cembra*, the limber pine, *Pinus flexilis*, the Korean pine, *Pinus koraiensis*, and the Macedonian white pine, *Pinus peuce*. *Pinus Armandi*, the Armand pine, is hardy in the region.

"The Macedonian white pine was long confused with the Swiss stone pine, which it resembles in some aspects, but it is distinguished from that tree by its taller, narrow growth, and by having smooth rather than brown tomentose branchlets.

"Some dozen fine trees represent this species in our collection, the oldest specimens from the collection of Mr. Loren M. Palmer, given to the Garden in 1903, being nearly thirty feet tall. These are found along the main drive through the garden, near the Southern Boulevard entrance. The general appearance of the tree is narrowly pyramidal, with branches and foliage closely set together and bluish green in color. The trees are hardy in this region and as far north as Ottawa; they withstand considerable exposure and make excellent small garden or yard subjects, being slow growing and compact. They are not of great importance commercially."

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SERVICE

You reap a royal salary by sowing a loyal service. But the real joy is in the sowing. Money palls, fame wearies, pleasure stings, youth dies, hope turns to grief; the one immortal happiness worth knowing is the sure delight in the habit of genuine, scientific service - service to your customer, to your employer, to your neighbor, to your friend, to your enemy.

Edward Earle Purington in *Forbes Magazine*.

A NOTE ON THE WESTERN WHITE PINE IN GLACIER NATIONAL PARK, (Mont.)

In answer to a letter requesting information concerning five-needle pines in Glacier National Park, Mr. Charles J. Kraebel, Superintendent of the Park writes:

"Western white pine (*Pinus monticola*). This naturally is the best pine occurring in the Park, reaching a size, in its optimum habitat, much greater than that of the western yellow pine, which occurs rather abundantly along the foothills of the middle western side of the Park. White pine reaches its best development in the Lack McDonald drainage, the largest trees being found at elevations between 3,500 feet and 5,000 feet. It never forms solid stands, but occurs scatteringly, mixed with western larch, Douglas fir, and other west side species. Characteristically it occurs in "patches" where it is the dominant tree over an area of three or four acres. I have seen numerous individuals more than sixty inches d.b.h. and well over one hundred feet in height. One old veteran in McDonald Creek valley, about a mile above the junction of Logan Creek, is over ten feet in diameter."

BLISTER RUST INFECTION ON WHITE-BARK PINE (*P. ALBICAULIS*)

In the Upper Birkenhead River watershed, in southern British Columbia, infection was found this last season by Mr. Lachmund on the white-bark pine (*Pinus albicaulis*) at several points. This is the first record of infection on this species within its natural range. The only other record of infection on this species in North America is the case of the cultivated plant in the arboretum of the University of British Columbia, to which the rust had evidently been transmitted from infection on *Ribes* nearby.

Extract from Western News Letter

CHRISTMAS TREE SHIPMENTS FROM WASHINGTON

Observations and investigations which have been carried on in the coast region of Washington by Mr. Felch during this last fall, have revealed the fact that probably at least three hundred cars of Christmas trees were shipped out of the coast region of Washington to all parts of the United States. Each car contains about 3,500 trees, making a total of at least 1,050,000 young ever-green trees that are cut in this region for Christmas trees. Since white pine is scattered over all of the coast region of Washington, there is the possibility that some may be shipped as Christmas trees. In most cases it has been learned that the shippers and transporting agencies have not been aware of the Federal quarantine. Further, most of these shipments are not inspected by a horticultural inspector. Information has been secured that some large shipments are made from Vancouver Island to California points.

This seems to represent grave danger from the standpoint of the distribution of white pine blister rust. Although Douglas fir trees are the ones generally used for this purpose, observations have shown that white pines are used for Christmas tree purposes and consequently it is not beyond expectation that some white pine may be included in these large shipments, although none have been found in the few shipments inspected. All parties concerned, who have been interviewed regarding this matter thus far, have expressed a willingness to cooperate by sending out instructions to their agents and putting up posters regarding the quarantine. Further investigations of this matter will be made along the lines of examining freight records and also the particular cutting areas, to determine whether there are any white pine growing in the particular vicinity. A definite educational campaign regarding this matter will be inaugurated before the next fall shipping season.

January 18, 1927.

C. R. Stillinger, Wash.

DISTRIBUTION OF PRUNUS TOMENTOSA

We have been advised by Mr. C. C. Thomas of the Office of Foreign Seed and Plant Introduction that they are now ready to make up orders for P. tomentosa. They have about 750 plants available and will make up each order in such a way as to include two or three varieties so as to avoid pollination difficulties.

Recently, Doctor Martin secured from each of the cooperating States a list of people who would test P. tomentosa and transmitted it to Mr. Thomas with the following letter pointing out the interest of this office in aiding the distribution of this plant:

"I have your letter of January 20th. In assisting the distribution of Prunus tomentosa this Office does not consider it a substitute for currants and gooseberries. However, we are interested in aiding horticulturists in testing small fruits with a view to increasing the number of different kinds that can be made available for use in regions where it has been necessary to eradicate currants and gooseberries to control the white pine blister rust. This plant will probably either prove desirable and find public favor on its own merits or fail to become established.

"I am sending you herewith a list of the names and addresses of people who are willing to test Prunus tomentosa. The person who furnished the names for each State is indicated on the list, in case you may wish to refer to them in writing to these people. If you find it necessary to reduce this list because of insufficient plants to go around, I can perhaps be of assistance to you in making eliminations. It is my understanding that "Mr Darrow will forward you a statement dealing with the planting and care of the plants, and the preparation of jelly from the fruit to be sent to each individual receiving a set. Also, I take it that either you or Mr. Darrow will take care of such follow up work as may be necessary in securing reports on the plants in the future."

P E R S O N A L S

Mr. Edgar T. Holland, of the Treasury Department has been transferred as assistant clerk to the Washington Office.

- - - - -

Miss Virginia Sargent, junior clerk-stenographer in the Washington Office has been promoted to assistant clerk-stenographer.

- - - - -

Mr. A. E. Fivaz has recently been studying infection conditions at Waterford, Vermont. He reported at Washington, D. C. for office duty on February 10, where he will be engaged in writing up the results of his summer's work carried on at the North Hudson (N. Y.) Demonstration control area.

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Messrs. Hodgkins, Lambert, McNerney, and Sheals are on quarantine inspection work in the middle west.

- - - - -

Mrs. Bessie Hart, in charge of the files at the Washington Office is in the hospital, recovering from an operation. Mrs. Hart is getting along very well, and we hope she will be back at the office soon.

- - - - -

Mr. Roy G. Pierce of the Washington Office, who has been out sick with the grippe for a month, returned to the office January 31.

Blister Rust

Anon.

Blister Rust in Danbury and Wilmot(N.H.) Rapidly Spreading. Merrimack County (N.H.) Farmer's Bulletin, January, 1927, page 5.

Anon. - New Jersey Investigates White Pine Blister Damage. American Forests and Forest Life, Vol. 32, No. 388, p. 242. April, 1926.

Anon. - Oregon Has Blister Rust Control Meeting. American Forests and Forest Life, Vol. 32, No. 388, p. 240. Ap.1926.

Anon. - White Pine Blister Rust, Its Course and Control in the West. Reprinted as a separate from The Timberman. (Portland, Oregon) Vol. 28, No. 3, January, 1927.

Note:- This is an excellent up-to-date statement of Western Blister Rust Conditions, and is made by the Executive Committee of the Western White Pine Blister Rust Conference.

Elliot, F. A. Blister Rust. In 16th Annual Report of the State Forester of Oregon for the Year ending December 31, 1926, pages 47, 48.

Koning, Maurits de. Roest Op Weymouth. Tijdschrift over Plantenzeikten, Nov. 1926, pages 314-315.

McCallum, A. W. Forest Pathology. Report of the Dominion Botanist for the year 1924. Div. of Botany, Canada Department of Agri. pp. 4-5, 1925.

As in previous years, the white pine (*Pinus strobus*) in the part of Ontario bordering on the Ottawa river have remained free from blister rust (*Cronartium ribicola*), which has been found, since 1919 at least, on cultivated *Ribes* in the district. The reason for the apparent immunity of this very fine stand remains obscure.

By the end of 1923 currants were generally infected throughout the Dry Belt of British Columbia, in the area south of the main line of the Canadian Pacific Railway to the international boundary, and extending to Grand Forks in the east. In the interior Wet Belt infection was prevalent from Notch Hill to beyond Revelstoke and south to Renata and Nelson. The conditions during 1924 were most unfavorable to the spread of the disease. Canoe, Revelstoke and Beaton are still the only known centres of pine infection.

Blister Rust

York, H. H. and W. H. Snell. Results of Inoculation of Pinus strobus with the Sporidia of Cronartium ribicola.

This technical article is being published in the Journal of Agricultural Research and will be out shortly. Those desiring this publication should write the Office of Information, U. S. Dept. of Agriculture, Washington, D.C., requesting it.

White Pine

Cope, Joshua A. White Pine Still King in the Empire State. American Forests and Forest Life. Feb. 1927, p. 105-106.

Hawkins, G. C. Forest Management by the New England Box Co. Merrimack County (N.H.) Farmer's Bulletin Nov. 1926, pages 5,6 and 11.

White Pine Insects

Graham, Samuel A. Biology and Control of the White Pine Weevil, Pissodes strobi Peck. Cornell University, Agriculture Experiment Station Bulletin 449, June 1926.

NOTE to the Eastern Agents. The Director of the Experiment Station, Ithaca, N. Y., has been sent your name with the request that this bulletin be sent you. Since my copy arrived about Feb. 1, you should have received your copy also, If not, write direct to Ithaca, requesting it.

- - - - -

Deep snow won't stop a real Ribes hound.

Push gets cooperation.
Pull gets Ribes.

Si Perkins will listen now.

"Uncle Ribee"

Come again Uncle, you're a welcome visitor.

On the Firing Line With Ribee Bill

Lend an ear, Agent!

Well developed powers of observation are characteristic of the
good woodsman;

But so is reticence.

Woodsmen who combine the first with an absence of the last
contribute much to the world's knowledge of natural science.

George L. Chase* Foreman, qualifies in the matter of observation;

But only the observer benefits from observation alone.

Fortunately, Chase is not reticent to the point of selfishness -

he offers his observations for the use of everyone who reads.

As long as the wood fiber holds the ink of the News Letter, other
men innumerable will read and benefit by one man's observation.

What a wealth of information about the disease, the host plants
and about forestry in general, would be made available if
all observations of Blister Rusters were so carefully recorded!

Lend a hand, Agent!

Yours,

Ribee Bill

*See pages 29 and 30.



BLISTER RUST NEWS



March 1927.

Volume XI

Number 3.

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS
Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 11. No. 3.

MARCH, 1927.

LET ME BE A PINE

Lord, let me be a pine that lifts its hands up high
To grasp the subtle secrets of the sky.
The maples blush on lower spheres;
The hemlocks bow their backs;
The willows lean their heads to list
To whisperings of running brooks;
But, oh, the pines do never tarry in their climb
Up to the stars.
Lord, let me be a pine.

Edna Smith De Ran.
American Forests, July, 1925.

WHAT PINE BLISTER RUST IS DOING IN
LINCOLN COUNTY, MAINE

BOOTHBY HARBOR:

Blister Rust in every pine lot examined. In one area approximately a mile square, a study of the trees on sample plots show that 50 per cent of all the young pines have blister rust.

BOOTHBY:

Blister Rust in every pine lot examined. Damage severe in some places.

EDGECOMB:

Rust in every pine lot examined. Pines found in one place approximately 60 years old which had had blister rust since 1905. Estimated that from 10 to 20 per cent of all young pine in Edgecomb is affected with the rust.

NEWCASTLE:

Heavy pine infection found everywhere from the Edgecomb town line along the Damariscotta River up to Damariscotta Mills. In one lot at least the infection runs as high as 50 per cent; although this is an exception.

WISCASSET:

Blister rust generally scattered everywhere throughout young pine growth, although no very badly diseased lots have been found in the territory covered so far.

DRESDEN:

Only three pines infected with the rust located in this town. White pine is apparently very scarce in all parts of the town visited.

SAGadahoc COUNTY

WOOLWICH:

Blister rust scattered in young growth in all parts of the town, although infection seems scarce in the extreme southern end of the town. In one place in North Woolwich cultivated Black Currants and other species of currants and gooseberries have caused very heavy damage in pine timber of approximately 50 years of age. Some of these trees are dead and a great many more will die or will have to be cut. Some of these trees appear to

have had the blister rust for twenty-five years, and this is probably one of the earliest infection areas in the country. Much thrifty pine of about 30 years of age was found infected with the rust as far as a mile from the road, together with other younger pines in large quantities.

E. E. Tarbox, Maine.

NEW ROADSIDE DEMONSTRATION AREA IN MADISON, NEW HAMPSHIRE

An excellent location for a new demonstration area has been found in the town of Madison on the Madison-East Madison road. The area consists of a grove of large trees with scattering small trees, varying from four inches to twenty inches in diameter.

About fifteen years ago a farmer set out six black currant bushes in a garden between the house and the grove which is on a southeast slope. The bushes were removed in 1923. The trees nearest the Ribes are badly infected and many of them are dead. Trees further away have limb and trunk infections. Some of the smaller trees are dead. A grove of 40 year old pines to the northeast has several infected pines. Some trees from this grove have been removed by the owner and by the agent for specimens. All the trees which are infected now have trunk infections. The owner is a strong booster for blister rust control.

The infected trees have all been tagged and some large posters will be placed to attract the attention of passers-by. The area has two distinct advantages: first, it is on a state road near the center of a town, and second, it is in a town where there is very little large pine infected.

S. H. Boomer, N. H.

PROGRESS MADE FIGHTING DISEASE IN BERKSHIRE CO. MASSACHUSETTS

During 1926, splendid progress was made in the control of white pine blister rust in Berkshire county. 167,000 wild currant and gooseberry bushes were destroyed on 67,000 acres at an average cost of about 10¢ per acre. Most of the area examined is in the towns of Alford, Egremont, Great Barrington, New Marlboro, Mount Washington and Sheffield.

There are now 21 towns in which the rust is known to be present on pines as compared to 15 towns a year ago. Very few of the pine stands examined during the year were free from the disease although in most cases no serious damage has occurred. Its presence however means increased destruction to pines as long as currant and gooseberry bushes are permitted to remain nearby. Such is the history in stands where the rust becomes established and is allowed to develop during several years. Removing the bushes stops further spread.

In addition to the further work to be done in the towns already partly completed, the control program will be started this year in Becket, Otis, Monterey, Sandisfield, Tyringham and Washington. As has been the practice in the past the State Department of Agriculture will continue to aid owners in finding and destroying currant and gooseberry bushes on their property.

Berkshire Evening Eagle, Pittsfield, Mass.

RIBES LEAVES OVERWINTERING IN OREGON

Mr. L. N. Goodding, State Leader in Oregon, reports the following findings as a result of a recent trip to southern Oregon: "On this trip south the shiny-leafed gooseberry, Grossularia cruenta, was found in the coast range with abundant old and new leaves. This was on the 28th of January. At this time the coast prickly-fruited gooseberry, G. menziesii, was in flower and beginning to leaf out slightly."

CONCLUSIONS CONCERNING EXHIBITS AT FAIRS

In the autumn of 1924, shortly after blister rust control work had been started in the eastern Connecticut district, the writer entered blister rust exhibits at the fairs at Woodstock, Brooklyn and Stafford Springs.

The management of the fairs at Woodstock and Brooklyn were glad to give space for these exhibits. These two fairs catered to a purely farming element, and much interest was shown in the blister rust exhibits. The fact that the work was new to this section played an important part in drawing this interest.

The fair at Stafford Springs is run largely as a money-making scheme and caters to an element made up mostly of non-farming people, people engaged in factory and town occupations. The agent was unable to obtain space in any of the exhibit halls, and had to set up the blister rust exhibit out-of-doors.

Each of these fairs lasted three days. The writer felt that worth while results were obtained at Woodstock and Brooklyn, but that the results from the Stafford Springs fair were not worth the time and effort required.

In the fall of 1925 exhibits were placed at Woodstock and Brooklyn, but not at Stafford Springs. It was not so easy to obtain space, however, as practically all available space at Woodstock and Brooklyn was sought for by revenue paying exhibits. Much less interest was shown in the blister rust exhibit this year since this was its second showing and also considerable work had by that time been done in this territory. The writer has set up no fair exhibits during the fall of 1926, but during the present winter has arranged window displays in three places in this district; namely, Brooklyn, Putnam, and East Woodstock, in which a good amount of interest has been shown.

The agent has also been making follow-up calls on those persons whom

he previously found to be most interested in blister rust control work, and upon those having cultivated Ribes within dangerous distance of pine. These people have for the most part been responsive.

The conclusions the writer has drawn from these experiences are: That it is well to hold fair exhibits in territory where work is new, and at fairs catering to purely farming and woodlot-owning elements; that it is unwise to repeat the fair exhibits too frequently; that interest in the work may be fostered and enlivened by window displays and follow-up calls supplementary to fair exhibits. The window displays have purposely been left not over three or four days in one place to avoid palling on the viewers.

Herbert J. Miles, Conn.

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BLISTER RUST MEETING ANNOUNCED BY WIRE

Party line calling is still in vogue in Weare, New Hampshire, one of the interior towns in Hillsborough County. Every day at noon central calls the lines, reporting the correct time and weather forecasts. Sometime ago I was able to have them report a Blister Rust Meeting in addition to the daily information.

That this means of announcing a meeting is effective was evidenced by the fact that 85 people were present, this turnout taking place on an evening when our grand old New England winter was reigning supreme.

A very enthusiastic meeting was held. "The Pines" were shown and very much appreciated. Weare is one of the few towns in New Hampshire, which does not have electric power and motion pictures are the exception rather than the general rule. Wet cell storage batteries, the equivalent of thirty-six volts, were used and served very effectively.

C. S. Herr, N. H.

CRONARTIUM RIBICOLA, THE TREACHEROUS.

White Pine Blister Rust

Cronartium Ribicola, the Treacherous, had entered another country.

With characteristic cunning he had succeeded in hiding himself as a stowaway on one of the ocean liners plying between Europe and our Atlantic seaports. The particular ship on which he sought passage brought over thousands of baby white pines and it was in the bark of many of these young pines that he had concealed himself, for Cronartium is the plant disease common to white pines, currants and gooseberries.

Being tender seedlings and as yet too young to talk, these baby pines could not reveal the presence of this enemy to the quarantine inspectors. Not only during the seas voyage and entry to our shores but for a long time afterwards this insidious fellow kept out of sight and meanwhile the helpless pines became settled in the soil of many parts of New England. As an experienced traveler he knew that he would not be wanted here so he contrived to keep under cover until he had become sufficiently established to preclude the possibility of banishment. Man first made record of seeing this chap in Russia, about 1850 and he had been ever since that time crossing Europe before he reached America. In this country nobody recalls seeing him before 1906 when he appeared on black currants at Geneva, N. Y., and after that he seems to have disappeared until 1909 when someone saw him on white pines at Lenox, Mass.

That Cronartium is unwelcome in this state is evidence by the fact that over 7000 owners have already taken action to rid their pines of his presence. These owners have destroyed his food supply by 6,310,610 currant and gooseberry bushes on 800,000 acres of land. They have spent \$37,636.00 of their money in their efforts to starve out this treacherous enemy of white pines.

The plant pathologists who continue to keep their eagle eyes on this tricky disease give us encouraging reports of the methods of control. There are scores of pine lots where *Cronartium* took heavy toll of pine before he was discovered. In all of these lots where bushes have since been destroyed they are unable to find any new outbreaks. Meanwhile vigorous young pine unmolested is filling up the gaps made in the stand by *Ribicola*. The advice which the "detectives" give us is to close and lock the door of our pine lots before *Cronartium Ribicola* finds a way to it. The key to the lock is eradication of all our currant and gooseberry bushes. Starve him out says the "detective."

W. J. Endersbee. Mass.

NEW HAMPSHIRE USES A LOT OF WOOD ANNUALLY

New Hampshire uses 750,000,000 feet of lumber annually, according to the State Forester J. H. Foster. Of this, 450,000,000 feet are cut in the state and 300,000,000 feet are brought in, at great expense, from the other states.

This 450,000,000 feet cut in the state is a drain and will cause a depletion, because the annual growth on timber in New Hampshire is only 350,000,000 feet. Formerly, wood was not cut until at least 60 years old; now trees 30 years old are being cut for box boards.

American Forester. July, 1925.

THE MEXICAN WHITE PINE (PINUS AYACAHUITE)

A very handsome tree is the Mexican White Pine which in many respects resembles the Himalayan Blue Pine (*P. excelsa*). Its rich green leaves, often 8 inches long on young vigorous trees, coupled with its gracefully-drooping cones, which have been known to reach 18 inches in length, render it a tree of considerable interest at the present time. It appears to enjoy plenty of moisture, judging by a robust example I came across recently on the bank of a lake.

Gardening Illustrated.
Jan. 15, 1927.

HOW NON-PINE OWNERS ARE BENEFITED BY COOPERATION IN BLISTER RUST CONTROL

The object of the following article and data is to inform the individual pine owner, non-pine owner and poll tax payer the exact amount he personally pays when his town or city appropriates for white pine blister rust control. The State carries on this work through the town cooperative method. The pine owner is of course the chief beneficiary, as he should be, inasmuch as the majority of the largest taxpayers in rural New Hampshire towns are pine owners. The continuance of pine growth as a permanent source of revenue to towns in this State has been and will continue to be their financial salvation, which leads to the reason for non-pine owners being interested and paying their part toward blister rust control.

Quoting from a reliable source, white pine has paid from one-fifth to one-half of the total revenue in New Hampshire towns. We will assume that in a given town the tax on pine furnishes one-third of the total town revenue. A certain non-pine owner's real property valuation is \$3500. The local tax rate is \$27. on the thousand and the total town valuation is \$900,000. The non-pine owner in this case pays a tax of \$94.50 a year. However, if the valuation of the pine was taken from the town's total valuation it would be necessary to increase the tax rate to \$36. on the thousand, making the non-pine owner's tax \$126. The presence of white pine in his town is saving him \$31.50 annually.

In the same town 15,000 acres need protection from blister rust at an estimated cost of 15 cents per acre or a total cost of \$1,000. This appropriation will increase his total tax bill approximately \$4.00. We will leave to his judgment the desirability of spending \$4.00 every five years to save \$31.50 every year.

A certain pine owner in the same town owns 250 acres of pine. His

total assessed valuation is \$12,000. The town appropriation of \$1,000. for blister rust control increases his tax bill just \$13.33 1/3. He is having his land eradicated at \$0.057 per acre and, in addition, a part of the taxes levied on his pine growth is practically returned to him as it is being spent on his land for the protection of his own pine.

A large number of town residents merely pay poll taxes. The poll tax in this state is \$3.00 per person and is not regulated by town appropriations. Whether the town does or does not appropriate will not increase or decrease his tax. He must pay \$3.00 anyway, but if the state revenue from pine were discontinued it might eventually be deemed necessary to increase the poll tax to help offset the deficit.

The following figures are given to show the method of determining acreage cost to pine owning taxpayers when town cooperation method is used. The individual's valuation divided by the total town valuation equals the percentage of the total appropriations or any part of the total appropriation that is paid by him. The result divided by his pine acreage gives cost per acre.

Example: Individual valuation \$7000.00
Total town valuation \$14,000,000.00
Individual pine acreage 350 acres
Town appropriations for B.R. \$500.
 $7000.00 \div 14,000,000 = .0005$ or .05% of appropriation paid by individual toward blister rust appropriation.

$\$500 \times .0005 = \$.25$ or total amount paid toward appropriation

$\$.25 \div 350 = \$.0007$ cost per acre which citizen pays for Ribes eradication by town cooperative method.

W. J. Cullen, N. H.

GOOD BLISTER RUST WRITE-UP IN LEADING NEW HAMPSHIRE NEWSPAPER

In the Manchester, N. H. "Union", for March 1, 1927, a column and a half and two good illustrations were devoted to blister rust. The article, which reviews the work done in blister rust during the past year, states in part: "The season of 1926 was one of the most successful in the annals of blister rust control in New Hampshire. * * * Re-eradication was conducted on 32,046 acres and but 160,165 bushes destroyed, or only an average of about four to the acre. The cost of such work averaged only \$0.13 per acre."

Edit:- It is very gratifying to see so much space given to blister rust in a paper enjoying such a wide circulation

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REPRESENTATIVE OF DIAMOND MATCH COMPANY OFFERS SUGGESTIONS FOR BLISTER RUST DEMONSTRATIONS.

That the roadside demonstrations on blister rust are quite worthwhile is revealed in a letter from Mr. W. O. Frost, who, under date of February 18, writes as follows:

"Mr. Cheney of the Diamond Match Company, Biddeford, Maine, called on me yesterday, and offered a suggestion that I am passing along to you to use if you see fit. He said he had heard much favorable comment about our roadside demonstrations, especially the use of the red tags stating that "This Tree has Blister Rust", or "This is a Blister Rust Canker", etc. He also suggests placing such tagged specimens at all roadside gas filling stations and eating places."

W. O. Frost, Maine.

NOTES FROM LITCHFIELD COUNTY, CONNECTICUT

From all indications it looks like an early spring. We hope to start State eradication in Norfolk by May 16 and tentative plans are made for a continuation of experimental work in Canaan which will probably start May 10.

* * * * *

Infection is heavy in the Pine-Ribes section of Litchfield County, but outside of that area inspections failed to show increased infection and no new infection centers were discovered.

J. E. Riley, Jr.

RIBES IN WINTER

Several newly infected limbs of pine trees were found by scout M. J. Connolly and myself while scouting a large pine lot belonging to Harry Smith of Sandwich. There must be Ribes nearby, was the first thought. As there were some stonewalls near the woods, Mr. Connolly and I examined a short section of the wall and sure enough we found the tops of several escaped cultivated red currants sticking up a few inches above the snow. The snow is about two feet deep in the woods. Next summer I hope to remove the bushes.

S. H. Boomer, N. H.

BLISTER RUST FILM SHOWN TO 1800 AT BRIDGEPORT, CONN.

Through the cooperation of Mr. Philip Hedges, Principal of Warren Harding High School, Bridgeport, I was enabled to show motion pictures last Tuesday to his Assembly of 1800. I also gave a talk with pictures at night in the High School to the Bridgeport Music Club. Should judge the attendance was about 500. The High School and the Music Club are likely places for disseminating blister rust education.

Feb. 18,

J. E. Riley, Jr. Conn.

SNOW PLOWS VS. BLISTER RUST

Prospects look very good for work in Rockingham County. I have interviewed the selectmen and leading citizens of each one of my towns, and am starting on the second trip. However, many towns have articles in their warrants for the purchase of tractor snow plows and these articles invariably are placed near the top. What effect this will have on Blister Rust cooperation remains to be seen.

Lewis C. Swain, N. H.

NOTES ON THE WHITE PINE WEEVIL AND THE WHITE PINE BLISTER RUST

From the Forest Protection Conference at Syracuse, N. Y.

Harvey J. MacAloney, Northeastern Forest Experiment Station, in discussing the opinion that "The most advantageous and cheapest way to grow white pine to protect it from the weevil and to control the injury is to grow it in mixture, preferably in groups with species that will be of value in the final crop. Hemlock and the better hardwoods, such as oak, ash, and hard maple, are advised."

Papers were presented on the gipsy moth and the white pine blister rust. In discussing the latter Dr. H. E. York, forest pathologist for New York State, said:

In advocating the substitution of species of forest trees for planting in place of white pine, we lose sight of the important principle that forest tree species while free from any known pests to-day may not be so 15 to 20 years from now. **** Already we have millions of trees of a foreign pine growing in New York, recommended for planting very strongly because it has no pests. But no one knows just how this species will react toward our native forest tree fungi and insects.

Extract From The Forest Worker, Jan. 1927

INCREASED INDIVIDUAL COOPERATION IN CONNECTICUT DURING 1926.

The eradication season of 1926 in Connecticut was characterized by a decrease over the previous year in the amount of State eradication and an increase in the amount of eradication through individual cooperation. This greater emphasis on individual eradication is in line with the State policy of gradually shifting more of the responsibility for the control work to the pine owner. During 1926, 22,287 acres were eradicated, and 86,295 acres within the natural pine area were eliminated on the grounds that they did not contain pine and were not potential pine lands. The statistical summary shows an increase in nearly all forms of education and service work over that of the previous year.

J. E. Riley, Jr. Conn.

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THE PRESIDENT URGES TREES ON POOR LANDS

The Associated Press March 6 reports: "A suggestion that the agricultural problem might be solved to some extent if poor farm lands were converted into forests was made March 5 by President Coolidge in proclaiming April 24 to 30 'American Forest Week' and recommending its observance to the governors of the 48 states. 'One fourth of our soil,' the President said, 'is better suited to timber growing than anything else. I cannot escape the conviction that our industrial and agricultural stability will be strengthened by bringing into full productive use this great empire of land. Although much progress has been made in public forestry and hopeful beginnings in private industry, we still have a vast aggregate of idle or semi-idle forest land, and another large aggregate of poor farm land that might more profitably grow timber instead of adding to the problem of agricultural overproduction."

CONTROLLING WHITE PINE BLISTER RUST BY ERADICATING RIBES



Crew Uprooting Wild Ribes. Photo by W. O. Filley.



Cultivated Black Currants Destroyed by Crew

BLISTER RUST NOT FOUND ON MACEDONIAN PINE AS PREVIOUSLY
REPORTED BY DR. C. von TUBEUF

In connection with the statement made in The Review of Applied Mycology, Volume V, page 260 that Pinus peuce (Macedonian or Balkan pine) is susceptible to blister rust (Cronartium ribicola), the writer has since ascertained that this is not the case. The supposed P. peuce seedlings attacked in the Grafrath experimental garden were really P. monticola. It is believed that P. lambertiana, which was stated by Klebahn to be susceptible, may also have been confused with P. monticola. This species, however, together with P. aristata-balfouriana (once found infected and the apparently immune P. excelsa), is not adapted to the German climate, except possibly in exceptionally mild situations.

Extract from The Review of Applied
Mycology Vol. V. p. 639, Oct., 1926.

Tubeuf (V. v.). Blasenrost der Weymouthskiefer. (Richtigstellung.)
(Blister rust of the Weymouth Pine. (Collection.) Zeitschr. für
Pflanzenkrankh. u. Pflanzenschutz, XXXVI, 5-6, pp. 143-146, 1926.

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SPAULDING COMMENTS ON THE SUSCEPTIBILITY OF SUGAR PINE.

The preceding article was called to the attention of Dr. Perley Spaulding of the Office of Forest Pathology, with the suggestion that he comment on the susceptibility of sugar pine to the blister rust. He replied on February 21, 1927, as follows:-

"Concerning Pinus lambertiana I can say that I have found it once infected in New York State, and that it has been infected in one or two places in Europe that I know of, so that it can by no means be called very resistant. You will note by referring to my article in Phytopathology (Vol. 15 page 591, October, 1925) on the partial explanation of the relative susceptibility of the American pines, that I have ranked lambertiana as somewhat more resistant than strobis."

R. G. P.

BLISTER RUST REMINDER CARD

When the currant and gooseberry bushes were destroyed upon your property to protect the white pine from blister rust, attention was called to the need for re-examining the land for any missed bushes, sprouts, or new bushes grown from seed. This card is to remind you that early spring is the best time to find these plants. If allowed to remain these bushes will continue to develop and spread blister rust to your pine.

You are, therefore, urged to go over your land this spring and uproot any remaining currant or gooseberry bushes. This action will increase the effectiveness of the previous control work and give additional protection to the trees.

The Department of Agriculture is interested in preserving records of all such cooperative work and it will be greatly appreciated, if you will fill out and mail the reply card when you have completed this work on your land. No postage is required on the reply card.

Blister Rust Control Agent

Blister Rust Control Agent:

In response to your reminder card, this will notify you that I have made a re-examination of about _____ acres of land in the town of _____, and have destroyed _____ wild currant and gooseberry bushes.

Name

Address.....

Date.....

NOTE:

Above is a sample of reminder card prepared by Mr. C. C. Perry, State Leader in Massachusetts, to be mailed to those upon whose property currant and gooseberry bushes have been destroyed. The three-ply card is folded so that the third part, which is already addressed to the blister rust control agent, may be detached and mailed to the agent, with a minimum of effort on the part of the cooperator or others.

THE CHEMISTRY OF CELL PROTOPLASM

The smallest unit capable of continued independent life is the nucleated cell. One of the fundamental problems of general physiology deals with the nature of the relations existing between cellular structure and the chemical processes of the cell protoplasm. The protoplasm, or living part of the cell, is the key to the life and habits of the individual cell. In the development of Chemical eradication of Ribes we are chiefly interested in the death of this protoplasm and its reactions to various toxic agents, hence we shall discuss the phenomena in that light.

Cell protoplasm is essentially a complex mixture of colloids (Gardukov) which may vary in consistency from that of a colloidal gel to that of a colloidal solution. In this system there occur processes of absorption and alterations of the distribution of water between the colloidal particles and dispersion medium. The living protoplasm then, is continually in the state of flux, under the action of electrolytes and of stimuli of different kinds. As a result of these stimuli mass law relationships are altered in such a way as to allow either synthesis or decomposition to occur. The entire plant structure is consequently very sensitive to external stimuli of any kind, and is capable of reacting in a number of different ways depending upon the nature of this stimulus. Straub showed the following effect of an electrolyte on cell membrane, viz., the protoplasm of the cell is surrounded by a membrane or surface layer which allows the passage of certain materials, while it prevents others. Nazeli has shown the membrane of the living cell to be self-forming and its permeability may vary and change with life processes. While the cells are resting, for example, it is impermeable to glucose and amino-acids,

but when the cell passes into a state of functional activity these substances can pass through the membrane. Clowes shows a relationship between biological and physical theories of emulsions. He says that the cell membrane is a system, a colloidal emulsion of two phases - a watery solution of protein and a lipoid phase. In the resting state of the cell, the membrane consists of an emulsion of protein solution in lipoid, the latter being the continuous phase. In this state, therefore, the membrane will be permeable only to the substances that are lipoid soluble. In the active state of the cell, there is a reversal of the emulsion and the aqueous phase becomes the continuous one. In this case, substances soluble in water will now be able to pass through. In each case, however, we must regard the emulsion membrane as a sieve. The membrane will, of course, be permeable only to those substances which are capable of passing through the "holes" or pores between the dispersed phases.

We can thus regard both the protoplasmic cell contents and the cell membrane as a colloidal system and that the cell membrane is a complex emulsion of colloids, the two phases of which are capable of undergoing reversal. This explanation throws some light on the varying results obtained by treatment of a Ribes bush with the same chemical at different periods of the year. It would appear that the most favorable time for the application of water soluble constituents is during that period of the plant's life when physiological activity is at its height. This period occurs early in the growing season. In our experimental work at Berkeley, we are attempting to ascertain what effect temperature, moisture, sunlight and point of application of the chemical has upon the amount of chemical absorbed by the plant.

H. R. Offord

January 18, 1927.

NOTE

Mr. Offord is working on the manner in which Ribes plants absorb chemicals, the object being to perfect methods of destroying certain Ribes with some kind of a knockout mixture. Mr. Offord's experiments have given highly promising results, but instead of inclining to salt, as the Barberry eradicators do, Mr. Offord finds mountain dew made of sodium chlorate gives the best kick-off with Ribes. The following version of "The Spider and the Fly", describes the methods which a blister rust agent may find necessary in the future.

OWED TO CHEMICAL ERADICATION

"Won't you please remove your Ribes?"
Said the Agent unto me;-
" 'Tis the peskiest little Ribes
That ever you did see".

"The way to save your pine trees
From death by blister rust
Is to kill that cursed Ribes;
You will, I hope and trust."

"Oh, no, no, no," I answered,
"To ask me is in vain;
For to destroy my Ribes,
Would bring to me great pain".

"I'm sure you will be sorry,
And much regret to be
Destroyer of those pine trees".
Said the agent unto me.

"For all that fine green woodlot,
With trees so straight and thick,
Will soon be rust-infected,
And you bank-book will get sick."

"Get off my farm at once, sir,
And make your going fast,
For if you don't", I promised,
"This trip will be your last".

Said the cunning Agent to me,
"Dear friend what can I do
To prove the warm affection
I've always felt for you?"

"I have with me a law-book,
Well stocked with all that's nice,
I'm sure you're very welcome--
Will you please take a slice?"

"Oh, no, no, no," said I to him .
Dear Sir that cannot be;
I've heard what's in your law-book,
And I do not wish to see".

"Sweet creature", said the Agent,
"You're wily and you're wise,
How handsome are your pine trees,
How brilliant are your eyes".

"I have a can of home-brew
Beneath the flivver seat;
Please amble toward the woodlot,
I'll promise you a treat".

"I thank you, gentle Sir," I said,
As I walked toward my trees,--
And the agent poured that liquor
Upon my prized Ribees.

And so he wove a subtle web,
In a manner very sly,
And in a week or two, dear friends,
My bush began to die.

And then he came to me again,
And merrily did say:-
"How is your darling Ribes bush,
On this most beauteous day?"

"Alas, alas, poor little thing,
I fear it has Dee Tee;
But even so, I'm very glad
That hooch did not get me".

And now, dear little children,
Who may this story read,
To idle, silly, flattering words,
I pray you'll ne'er give heed.

Unto a blistered agent
Close heart, and ear, and eye,
And take a lesson from this tale
Or your Ribes bush will die.

S. B. D.

"CURRANT BUSH BEATS RADIO ON 'PICKUP'"

The above is the title of a short article which was sent the writer some weeks ago from New York City, having appeared in the New York American. Some one of a reportorial trend of mind capitalized on the idea of comparing the receptive power of infection of the black currant with the receptive power of the radio. The article in part reads as follows:

"Sacramento, Calif., Dec. 25. - The cultivated English black currant, intermediate host of the white pine blister rust, a serious timber disease, rivals some radio sets in 'pick up' powers -- that during a heavy wind the currant bushes are able to pick up spores of the blister rust fungus, 'broadcast' 200 miles away."

Western News Letter.

LET'S HAVE A SHOW

In the January News Letter, Mr. Riley of Connecticut, discusses the educational value of motion picture films and presents some very appropriate thoughts which may well be followed in the preparation of a new blister film. While it is doubtful to this writer if the educational value of a blister rust film is the key to the solution of the type of new film to be produced, the general subject of the new film merits greater public discussion, particularly on the part of district agents who are the main users of the pictures.

It is not my intention to discuss the educational value of the film because the film is only one of several educational tools which has been accepted and adopted after repeated trials by all sorts of educational bodies other than our own. If there is any argument on the point of value the main issue to consider, in my opinion, is the adaptation of the film as an educational tool. As I look over the field of its use, it seems to be most generally regarded as an instrument of entertainment. People go to motion pictures primarily to be entertained. The masterpieces of the so-called great silent drama are highly entertaining as well as instructive, and it is pertinent that the most successful ones are the most entertaining.

It is my suggestion that the contemplated new blister rust film be first of all entertaining and secondly instructive. It is not necessary to tell the whole story or show a mass of detail to make it instructive. No agent is going to get any cooperation from the film itself. He uses it only as a means to an end, to attract the people, to get their interest, and to keep them in a receptive mood. The film is one of several methods of paving the way to cooperation. The agent must tread the way with actual contact, oftentimes several contacts, before he secures the signature on

the dotted line. The contact, the interview, is the place for most of the story. It is here that the details are worked out. The film is no place for them.

Let's have a show and entertain the people. We believe they will cooperate better, more willingly, for being entertained.

W. J. Endersbee, Mass.

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CONNECTICUT FORESTRY OFFICIAL BELIEVES PUBLIC "FED UP" ON PROPAGANDA FILMS

Re the educational value of the motion picture film, ye editor was talking with P. L. Buttrick, secretary of the Connecticut Forestry Association not long ago. Mr. Buttrick was of the opinion that the public was "fed up" with propaganda and he believes that education through the motion picture films is apt to be looked upon as propaganda. There seems to be a lot of truth in this statement. If propaganda has fallen into disrepute, perhaps we may still educate through the motion picture film if we serve our educational material in small doses and sugar coat it with a good story full of action. It must be made realistic if it is to please and is to be remembered and talked about later. A realistic film will be talked^{about} and the educational material, if it is properly worked into the story, cannot help but be discussed along with the story. The making of such a film requires not only careful thought but experience in the technique of production. That means professional handling of the story and professional acting.

J. E. Riley, Jr. Conn.

O F F I C E C O M M E N T

Some of the employees are slow about sending in applications for leave. All leave applications should be sent in promptly, and requests for leave without pay must be approved by the Bureau before leave begins. Statements showing necessity for leave without pay must always accompany the application.

There have been a few instances lately in which employees have sent telegrams at Government expense relative to salary or expense checks. This is a violation of the Standardized Government Regulations issued October 1, 1926. See paragraph 73. When it is necessary for employees to communicate with this office by wire relative to delay in pay checks, the messages should be prepaid.

We appreciate very much the way the men have been cooperating in sending in their expense vouchers promptly after the first of the month.

Employees who have typewriters are requested to use them in preparing their expense vouchers, itineraries and automobile travel reports where it is possible to do so. These papers have to be read several times after they are received in this office and much time would be saved if typewriters are used in all cases where possible.

We are prepared to ship supplies promptly at this time and it is requested that you send in your requisition for spring supplies now. The blue requisition pads will be furnished you upon request.

H. P. Avery

P E R S O N A L S

Mr. Julian F. Cannon, who has been employed in the Office of Blister Rust Control at Washington for over two years, resigned March 10 to accept a position with the National Cash Register Company.

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Mr. John F. Brubacker was appointed clerk in the Office of Blister Rust Control, effective March 11.

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Mrs. Dorothy Dow, clerk-typist at Spokane, Washington, resigned March 16.

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Mr. Martin E. Connolly was appointed Agent, effective March 10. Mr. Connolly whose headquarters is at Concord, N. H., will be engaged in quarantine inspection work.

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Mr. Byron W. Carr was appointed agent, effective March 10. Mr. Carr's headquarters are located at Summit, R. I. He will work on quarantine inspection.

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Mr. A. T. Davidson, In charge of Dominion blister rust work in British Columbia, whose headquarters were at Vancouver, B. C., was killed in an automobile accident at Vancouver March 5.

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Mr. S. B. Detwiler left the Washington Office March 12 to be at the Conservation Commission, Albany, March 14, and at Rochester, March 15. At Rochester he will confer with nurserymen on quarantine #63. He will be in Chicago on March 19 to meet with quarantine inspectors. From Chicago Mr. Detwiler will go to the far west for six weeks or more.

P U B L I C A T I O N S

Blister Rust

Endersbee, W. J. Cronartium Ribicola Fischer. White Pine
Blister Rust. Berkshire Farmer's Bulletin. Feb. 1927, page 7.

Mr. Endersbee in this brief article has personified
Cronartium Ribicola Fischer, the Treacherous, in a
very happy way. See page 65 for part of this article.

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BLISTER RUST

NEWS



April 1927.

Volume XI

Number 4

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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Roy G. Pierce	Editor	- Washington, D.C.
Thos. J. King	Assoc.	" - Maine
S. V. Holden	"	" - Vermont
W. J. Endersbee	"	" - Massachusetts
J. E. Riley	"	" - Connecticut
George H. Stevens	"	" - New York
H. J. Ninman	"	" - Wisconsin
C. R. Stillinger	"	" - Western Office

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
Washington, D. C.

THE BLISTER RUST NEWS
Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 11. No. 4

APRIL, 1927.

BLISTER RUST MENACE HIT BY MASSACHUSETTS

This State Makes it Illegal to Grow, Possess, or Sell
Black Currant Plants in the State.

The State of Massachusetts, through its commissioner of agriculture, Dr. Arthur W. Gilbert, has declared the cultivated black currant a public nuisance. The Massachusetts order, effective April 1, 1927, which outlaws the black currant, says that hereafter "it shall be unlawful for any person to possess, propagate, sell or offer for sale, these plants in the State of Massachusetts." This action has been taken for the purpose of strengthening the general blister-rust control program now under way in the State. In connection with this order, the State department of agriculture is issuing an illustrated circular--Massachusetts Department of Agriculture, Department Publication No. 132--in which an appeal is made for the immediate destruction of the black currant in order to adequately protect the valuable white pine of the State. The cooperation of every citizen of the State is solicited in the interest of the public welfare.

The Official Record,
United States Department of Agriculture,
April 13, 1927.

FACTS YOU SHOULD KEEP IN MIND
In Considering
TOWN APPROPRIATIONS FOR BLISTER RUST

Ten Facts Regarding Blister Rust

- (1) Blister Rust is a BARK DISEASE, not a bug or worm as many people believe.
- (2) It is of European origin, and found its way into the U. S. on nursery stock.
- (3) It is ABSOLUTELY FATAL and kills old as well as young white pines.
- (4) It has been found in every white pine town in New Hampshire.
- (5) Blister Rust CANNOT SPREAD directly from infected to healthy pines.
- (6) It spreads from infected pines to leaves of currant and gooseberry bushes and from these to nearby white pines.
- (7) An average increase of infection of 8 to 15 percent may take place yearly in localities where no control work has been conducted.
- (8) In infected areas pine lots found free from Blister Rust do not contain currants or gooseberries
- (9) 22,469,756 currant and gooseberry bushes have been destroyed in New Hampshire since 1918, over areas aggregating 1,757,964 acres.
- (10) REMEMBER: Destroying currant and gooseberry bushes stops the spread of this fatal disease among the white pines.

Ten Reasons Why Your Town Should appropriate For Blister Rust Control

- (1) White Pine, our foremost native pine, is adapted to soils unfit for agricultural crops.
- (2) White Pine pays a large percent of the taxes in most New Hampshire towns.
- (3) White Pine has paid off mortgages and educated families.
- (4) Its logging and manufacture provides employment for thousands of people.
- (5) White Pine is capable of being of even greater economic value and importance than ever before.
- (6) Pine lots seriously infected by Blister Rust are being located continuously.
- (7) White Pine under 20 years of age, infected by Blister Rust, will not live to reach box-board size.

- (8) Wild currants or gooseberry bushes are common throughout pine lots.
- (9) The time to save your pines is before they become seriously infected--not after.
- (10) The majority of voters in 179 New Hampshire towns believing Blister Rust serious and their pines worth protecting, have voted appropriations.

Is not the destruction of currants and gooseberries a small price to pay for the protection of such a valuable tree?

Merrimack County (N.H.) Farmers' Bulletin,
March, 1927.

BOARD OF SUPERVISORS ADOPT RESOLUTION, REQUEST MUSKEGON, MICHIGAN
BE MADE A WHITE PINE BLISTER RUST CONTROL AREA

Under date of January 21, 1927, the Board of Supervisors of Muskegon, County, passed the following resolution.

"Whereas, Muskegon County is reforesting to the extent that it is the leading County in Michigan for this important work.

"Whereas, the white pine blister rust is a disease which seriously menaces our white pine, be it,

"Resolved, that the Board of Supervisors of Muskegon County hereby requestss that Muskegon County be designated as a white pine blister rust control area and that suitable steps, including such quarantines as may be necessary, be taken to prevent the introduction and spread of the blister rust disease.

Muskegon County Agr. Committee

J. R. Davidson
Chester A. Broner
I. R. Ellison.

"Mr. Schoenberg moved that the resolution be adopted. Supported by Mr. Hildreth. Carried."

Note:-A copy of this resolution was sent to the Michigan Department of Agriculture for its attention. Mr. Mandenberg of that office forwarded a copy to the Office of Blister Rust Control.

NEW HAMPSHIRE TOWNS APPROPRIATE FOR BLISTER RUST

On March 8th, of this year, 73 towns voted funds for blister rust control in the amount of \$26,450. There are three cities likely to continue control measures, and if such proves to be the case, the above amount will be increased approximately \$2,400. The Forestry Department, as formerly, will increase these appropriations 25 per cent.

Irrespective of all educational work on the part of Agents, and the State Department, Blister Rust finds at Town Meeting considerable competition from motor tractors, highway construction, schools etc. The demand for better transportation during the winter months has caused many towns to purchase tractor plows, and often when this occurs, other appropriations are cut or passed over. Such proved to be the case this year, and was undoubtedly the reason for a slump in town blister rust appropriations.

Since 1918, New Hampshire towns and cities have voted nearly \$205,000 for cooperative control, and individual pine owners almost \$35,000. Many towns are voluntarily taking up the problem of re-eradication.

L. E. Newman, N.H.

AGENT RICHARDSON PLANS TO HOLD A SERIES OF MEETINGS
IN SOUTHERN GRANITON COUNTY, N.H.

Plans are now under way to hold some sort of a Forestry Field Meeting in each town where control work is to be carried on this year in my district. I expect that these meetings will vary a great deal and, while they may not draw out large numbers, will help to some extent on future work for all will know about the meeting and those attending will surely carry away information which may be passed along to others. In each case I shall try to have the meeting include besides blister rust, general farm woodlot problems.

G. F. Richardson, N. H.

BLISTER RUST CONSUMES AND WHITE PINES WITHER, BUT ONLY
THROUGH NEGLECT.

The white pine blister rust disease has been discovered in many towns in Norfolk and Bristol counties where no work has as yet been done. This only proves that the disease is on the increase. It has conclusively been checked in towns where control work has been done. Practically all pine areas in Plymouth County will be covered by the end of the season 1927.

Some have said that too much stress is laid upon white pine blister rust and that it will scare people so that white pine trees will not be set out. However, it has been the aim of the department to educate the public and woodland owners so that precaution can be taken to control the disease. The cost has been small indeed and is very cheap insurance at the best.

We still hear of people setting out white pine trees and the demand exceeds the supply. We hear some people saying that the white pine weevil also will kill the white pine trees and that there are areas upon areas that have not grown in the last ten years. These are misleading facts and we still see small and large woodland owners who have good forestry heads on their shoulders, setting out white pine trees every spring. And so, in spite of these two pests, the blister rust and the weevil, we still have people reforesting their lands. This coming spring is a good time to protect your pine, whether it be a small or a large lot. Advice and bulletins are free or, better still, have the agent look it over, free of charge.

The Plymouth County (Mass.) Farmer, Mar. 1927

ERADICATION WORK IN NEW HAMPSHIRE STARTING EARLIER THIS YEAR

I believe our eradication season will start about May 1, which is about about 10 to 12 days earlier than my 1926 starting time. Although most of the snow seems to have disappeared, there is still some in the woods. The cold weather still holds on pretty well and this will retard the leafing out of the Ribes.

T. J. King, N. H.

BLISTER RUST IN UNITY, SUNAPEE, AND PLAINFIELD,
NEW HAMPSHIRE SPREADING RAPIDLY.

Recent examination of pine lots in the towns of Unity, Sunapee and Plainfield have revealed the fact that the white pine blister rust is firmly established there. Blister rust infection on the pines was quite readily found. In a good many instances it was possible to learn the names of the owners on whose pines the disease was found.

In Plainfield rust has been found to some extent upon every lot examined. In many cases the owners were greatly surprised to learn of its presence among their pines. Anyone desiring an inspection of their pine lot can have it done, free of charge, by simply advising either the Farm Bureau Office at Claremont or the State Forester, Concord, N. H.

A group of interested citizens from Sunapee made a trip with the Blister Rust Agent to see the Blodgett Landing Infection area. Here they saw mature trees dying from the effects of the disease and came away very deeply impressed with the seriousness of the disease and its possibilities for effecting even mature growth. The bushes have been removed from this area thus definitely checking further spread. No new infections have been found since the removal of the currant and gooseberry bushes which were responsible for the infection.

Sullivan County Farmers Adviser,
Claremont, N.H., Jan., 1927.

A SAMPLE MONTH ON THE QUARANTINE LINE

Mr. R. E. Wheeler totalled 411 hours on duty on his itinerary report for March. This is an average of over 13 hours daily for each of the thirty-one days. He is on the job of quarantine inspection at a midwest point.

As an old quarantine inspector, the Editor believes that this is a fair sample of the hours put in by nearly every one of the "men on the firing line."

P. S. Report from Mr. E. J. McNerney has just come in. He tallies up 458 hours for March. It looks as if somebody is really working.

R.G.P.

NOTES FROM WINDHAM COUNTY, CONNECTICUT

The Bowditch Bird Preserve in Pomfret, which has been the centre of infection in that town, was checked over in 1925 and the caretaker, Mr. Rowland Baker, has put a blister rust protection poster on a sign post in a conspicuous place by the side of the state road. This particular road is on the main highway between Putnam and Hartford, and a good many people will probably see this poster.

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I have about 1800 acres lined up for cooperative control work and this is hardly a beginning. I am planning to get several thousand acres in five important pine towns cleaned up this season. The weather is still cold here, freezing a little every night, but I expect the eradication will begin in two or three weeks; I have already done some cultivated Ribes eradication.

Herbert J. Miles, Conn.

BLISTER RUST DISCOVERED IN ACWORTH AND EAST WASHINGTON,
SULLIVAN COUNTY, N. H.

White pine blister rust has been found in Acworth so recently that it is impossible to give the names of the owners of all the lots. More than half the pine area has been examined and blister rust found in every lot. One of the worst infected areas in this section is located in East Acworth in what is known as the Michell lot. In this lot alone 193 pines were found to be infected with blister rust.

Blister rust has been found scattered through East Washington. Two badly infected areas were found in the vicinity of Washington Center. Forty-five infected trees were found on pine owned by Draper Manufacturing Company and 53 on pine owned by F. M. Young on the old Goshen road.

Sullivan County Farmers Adviser.
Claremont, N.H. Feb., 1927.

WHITE PINE PLANTATION FOLLOW UP

In order to get a bit more private money for blister rust control this season and to better know the condition of the various white pine plantations in my district, it is my plan to visit each one personally. While I realize that I may not be able to get the owner out in every instance, it seems to me that in most cases the owner should be one to whom it should be easy to explain the need of control work. It should also be easy to get his cooperation for it is certain that he must have some interest in forestry or he never would have set out the trees.

I plan to use the following method in this work: First locate and go over the plantation to determine the condition of the trees, next get the owner out, if possible, and if not to call to his attention the need of protecting the pine from blister rust. At the same time endeavor to learn of his woodlot problems and assist him in every way possible.

I shall also try to arrange, in as many towns as possible, a field meeting on one lot or plantation where all can gather and talk over their success or problems.

G. F. Richardson, N. H.

TAG MORE INFECTIONS

This season I am ordering from Concord a large supply of tags in order to carry out the following plan. I shall carry a number of these tags with me and tag every roadside infection that I locate. I also plan to have each crew foreman tag all the infections he finds or at least a few trees in each group where he notes infection along brooks, back roads, wood roads and paths. I feel that in doing this we are going to show a greater number what the disease is.

G. F. Richardson, N. H.

PINE TREE PLANTING PROFITABLE EMPLOYMENT LOT PHILLIPS DECLARES

Seedlings Cost Less Than Three Cents Each and Will
Grow on Idle Land and Increase in Stature.

* * * * *

"Does it pay to grow pines in Plymouth County?" "The man who says it does not simply doesn't know," said Lot Phillips, owner of Lot Phillips Company, box manufacturers, West Hanover, Mass., while visited by county foresters of Plymouth County on a tour yesterday. Mr. Phillips showed the group hundreds of acres of his pine, the growth of which he is watching with great care, much of it he planted himself.

"That field there, " he said, indicating a block of many acres of brush land with small pines protruding up through it, "we planted in 1923. The trees cost us 2.7 cents apiece planted, including the cost of the trees and all the labor. The cost of setting pines is very small. A piece of idle land will grow pines while you are doing something else and continually increase in value." Robert Keith's planting in East Bridgewater was the next visit, followed by N. A. Bassett's of Bridgewater. Robert B. Parmenter pointed out examples of excellent forestry.

The trip was conducted by E. M. Brockway, blister rust agent for southeastern Massachusetts, G. C. Norcross, county agent, and Robert B. Parmenter, state forestry specialist. Mr. Parmenter discussed points of interest at each place and answered questions.

The Plymouth County (Mass.) Farmer, March 1927.

WHOLEHEARTED COOPERATION FROM AN AGRICULTURAL AGENT

When it came time to start the educational work in the territory assigned to Agents Baker, Richardson and King in Sullivan County; in addition to our own territory, a conference was arranged by Mr. Newman, our State Leader with the County Agricultural Agent, Mr. Wells.

Mr. Wells went through his county, town by town, outlining the agricultural situation in each town, advising us of the influential men and those who would most likely be for and those against public work such as ours. Following the conference, he pledged his wholehearted support of our work. By agreement I was to handle all the written publicity material to be used in the county, the other two agents to send to me anything they wanted printed and I was then to condense it with my own material and forward it to Mr. Wells. The enclosed copies of the Farm Bureau Paper for Sullivan County show how generously he contributed space in his paper.

Feeling that we were not getting all the publicity we should ~~in~~ order to properly bring our work before the public, I had another conference with Mr. Wells. I found that there were two weekly newspapers in the county, both of which were widely read by the rural people. Mr. Wells advised that the editors of both these papers were very favorable towards his work and thought he might arrange for space for our Blister Rust news. As a result everything that was printed in the Farm Bureau paper found its way into the columns of both these papers and our work began to be discussed quite generally throughout the county.

Apparently not satisfied with all he had done, Mr. Wells suggested that the material which made up the front page of the February issue of the Farm Bureau paper be inserted in both the county weeklies as an advertisement. Mr. Wells made us the following proposition: He would pay for the advertisement in one of the weekly papers if we would pay for the other. Feeling that it would

be impossible to obtain authorization for such an expenditure, yet realizing that a great deal of good might be accomplished by running the ad, also that we ought to be at least as much interested as Mr. Wells, Baker, Richardson and I agreed to finance the other advertisement. It appeared in an issue about 10 days before Town Meeting. From what I have heard it accomplished all that we hoped. In addition, Mr. Wells prepared and sent out a letter which I think is one of the best of its kind I have ever seen coming from the pen of one not directly connected with the work.

Altogether I feel that the Agricultural Agent in Sullivan County has "come across" in fine style, especially since he has formerly been credited with being no more than luke-warm on the question of blister rust control. What is true now of Sullivan County has always been true of my relations with the Agricultural Agents in Merrimack County.

T. J. King, N. H.

Norfolk, Conn. Pledges \$500. for 1927 Blister Rust Eradication.

Only one town, Norfolk, was asked to contribute to the 1927 eradication work. The appeal to that town was based on a survey covering inquiry into conditions following eradication and covering the need of initial eradication in unworked portions of the town. A field demonstration of blister rust damage and of the effectiveness of control measures last fall resulted in a \$500.00 town appropriation on condition that the pine owners raise an additional \$500.00. The latter has been pledged, making available \$1000.00 of town and individual money. The state will supply the balance of the funds needed in completing eradication in the town. Work will start about May 16.

J. E. Riley, Jr. Conn.

CONTROLLING BLISTER RUST

The following letter was sent the residents of Sullivan County, N. H., by County Agricultural Agent Wells:

Dear Sir:

If an article is in the town warrant this year regarding Blister Rust, I hope that when same comes up for consideration your town will vote to start clean-up work or continue same if the work is already under way. Taxes are high and no one appreciates more than I the necessity of keeping them down or reducing them if possible. It will prove cheaper for the tax payers, however, to prevent the spread of Blister Rust than to allow it to become well established in the County. White pines are an important crop on Sullivan County farms, and add to their value. The Federal Land Bank will loan more on a farm with pine than without.

Blister Rust has spread very fast in the County during the last six years, and will surely wipe out the pine if not stopped. A few years ago, \$6000 would have stopped the spread of Gypsy Moth in New England, but nothing was done, and now many thousands are spent every year in an endeavor to control it. A few years ago, a small amount appropriated would have controlled the Corn Borer, but now Congress has raised ten million to stop its spread. We should stop Blister Rust before it goes too far and when it can be done cheaply.

Over 80,000 acres have already been cleared in Sullivan County at an average cost of about twenty cents per acre. One hundred and seventy-nine towns in the state have started the work. Seventeen White Pine states are on the job with control work. The disease has already been found in two hundred and four towns in New Hampshire, and in every town in Sullivan County.

The State will add twenty-five per cent to your appropriation. Why not be forehanded and appropriate from \$200 to \$400 or more each year until the spread is stopped? The Pine will be saved for our children if it is too young to be cut during our time.

I fully believe it will be money in the tax payers' pockets to act now.

Yours very truly,

H. N. Wells
County Agri. Agent

CONNECTICUT NOTES

Experimental work is to commence in Canaan May 10. The purpose of this experimental work is to obtain certain data necessary for the completion of the studies made two years ago to determine some of the factors influencing crew efficiency. The work will be done by a five-man crew and foreman, and the data will be taken by two or three federal men.

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Two camps will be maintained this year; one in Canaan and the other in Norfolk. The state work in Canaan will start about May 28.

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Eradication work in 1927 will be confined to eight towns in Litchfield County, two towns in Windham County, and three towns in Tolland County. It is hoped to complete first eradication in these towns. Plans are being made to utilize boys clubs and the Boy Scouts in eradicating pine areas where cooperation can not be otherwise obtained.

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No accia have been reported so far this year. Mr. Filley and I failed to find any on a field trip yesterday, (Apr. 8), in Litchfield County.

J. E. Riley, Connecticut.

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A WOODLOT OWNERS' COOPERATIVE

A rather important development is being made along forestry lines in Merrimack County (N.H.). Plans are going formulated for the organizing of the woodlot owners of the county. A preliminary meeting is to be held the last of April for the purpose of effecting the organization. At that time it is expected that some definite program will be mapped out. This program will, of course, include blister rust control as an important feature. Such an organization offers an admirable opportunity for forestry development and it will be an interesting undertaking to watch.

T. J. King, N. H.

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TRAIL PAPER AND MOONSHINERS

A short time ago I was told a rather amusing story by the Chairman of the Board of Selectmen of Allenstown, one of the cooperating town in my district. His story ran somewhat as follows:

One of our police officers was seeking some moonshiners who were reported to be working in the outskirts of the town. The section in which he was seeking them was a rather isolated wooded portion of the town. As he was walking along the road his keen eye detected some small pieces of paper leading from the road into the woods in a sort of a trail. Immediately his suspicions were aroused. He thought he had a clue. He followed the trail with great care and caution feeling that he might come upon his quarry at any moment. After proceeding some distance he came upon a trail going off at right angles from the one he had been following. He stopped, scratched his head and then decided to follow the new trail. Not long after he struck another trail and turned and followed that. During the next hour and a half he said he followed so many trails and turned in so many directions that he became lost. When he finally found his way out of the woods to a road, darkness had descended.

After reaching the village he immediately looked me up and told me of his adventure.

"What do you suppose those trails of paper were for, he asked?"

"Oh, that! I replied, is paper which the white pine blister rust boys use in their work. They mark each strip as they do it so that they will know where they have worked. I saw them while they were working here during the summer."

"Well, I'll be hanged," said the police officer, "I thought that pesky bootleggers were using that paper to mark a path to their liquor. By gorry it makes me sore to think that I was so easily taken in. I'll bet I walked fifty miles following that Chinese puzzle of crisscross paper trails."

T. J. King, N. H.

CAMP FIRE GIRLS BECOME INTERESTED IN PLANTING WHITE PINE

Has Miss Harriet L. Clark, teacher of English in the Danbury High-school, Guardian of Camp Fire Girls, Winner of the Hon. James L. Curley Silver loving cup for being the best camper at Camp Kiwanis, solved the problem which has been perplexing Foresters and economists?

To begin with, it is tree-planting and forestry year in Camp Fire circles. Miss Clark believes in personal work in forestry as in other things and is not much in sympathy with doing things by proxy. Her own special group of ten high-school Camp Fire girls are enthused with the idea of doing their own tree planting. But the problem was, where could they find land on which they could be permitted to plant trees? No one knew where there might be such a place, so Miss Clark fared forth in her car to find a spot. Out on the State Road some five miles from Danbury toward New Fairfield, she came upon Mr. Arthur L. Disbrow who specializes in milk production from his splendid herd of Holstein Cows. Yes he had a three acre lot on which the pasturage had become unsatisfactory and which he had often wished might be planted to trees. Like most farmers he had always been too busy and too short of help when the time was right to plant trees. If the Camp Fire Girls, whom he seemed to have heard of as being a specially good lot of girls, wanted to plant the lot, they might do so if Miss Clark would supervise the work. He further agreed to send his check for fifteen dollars to pay for the three thousand trees which she is ordering for him from the State Experimental Station. Half are to be white pine and half red pine. It might be added that Miss Clark was not ready to send in the order until she secured expert advice from a graduate forester who made an inspection of the land to determine what species of trees would be most suitable for that particular site.

Now the Camp Fire Group is looking forward to happy half holidays and to odd hours after school, when they will work in the open and dig in the fresh clean earth. Mr. Disbrow has promised milk and perhaps a wee bit of cream for the out-of-doors meals which the girls are planning as part of the program.

Apparently the arrangement is entirely satisfactory to all concerned. It has been recognized that more attention should be given to forestry operations on private lands. The boys and girls of the cities and towns should have the opportunity to enjoy the fields and woods at odd times and to accomplish much forestry work which will help the future of the State. Planting trees, trimming trees and eradication of wild gooseberry bushes can advantageously be done by Camp Fire Girls and by Boy Scouts, if some means can be found to bring country land owners into touch with the right city boys and girls.

NOTE: - This was one of the first results of my talk on March 19 to about 100 Camp Fire Girls and perhaps 35 parents and friends at a Grand Council Fire held in the High School Gymnasium.

E. D. Clark.

SEVENTEEN N.H. TOWNS CO-OPERATING IN BLISTER RUST CONTROL

Seventeen towns appropriated \$6,650.00 at the recent Town Meeting for the purpose of continuing the White Pine Plister Rust Control program inaugurated several years ago. The State Forestry Department increases this sum 25 per cent making a total of \$8,312.50 available for work this season. Several of the towns listed below are located in Sullivan County, part of which now comes under our blister rust agent. Cooperating towns are listed as follows:

Allentown	\$400.00	Newport	\$400.00
Bow	200.00*	Fembroke	400.00
Bradford	400.00	Sunapee	400.00
Dunbarton	400.00	Sutton	400.00
Henniker	400.00	Unity	400.00
Hill	400.00	Warner	600.00
Hooksett	250.00	Webster	400.00
Hopkinton	400.00	Wilmot	400.00

*Money appropriated for rechecking.

MEET PRINCE PINE

The following is the first of a series of short articles entitled, "Prince Pine." They are designed to teach a lesson in some phase of forestry and one of them will be printed monthly for an indefinite period.

Prince Pine is a young tree who lives in the old pasture on Mr. Farmer's farm in the Berkshire Hills. With a thousand other young pines, he was taken, at the age of four years, from the state nursery and given a place near the gap in the old stone wall where Mr. Farmer always entered the pasture. Mr. Farmer, at first, had been reluctant about planting any trees. The old pasture had always been too rocky to plow and the grass which once grew in abundance was now annually becoming more parched and scarce. He realized that the land was useless in its present condition but he was not able to think of any way to improve it. Finally at the County Agent's suggestion he had decided to experiment by growing some trees.

Mr. Farmer had not been enthusiastic about the tree crop being a solution to his problem. Trees take such a long time to grow to maturity that he could not see any immediate return to himself. He had become so accustomed to thinking in terms of one season crops that the County Agent had difficulty in persuading him that a valuable green crop on the land was to be preferred to rocks and no crop at all. Besides if he did not live to harvest the crop himself the trees were a safe investment for the future needs of his family and in the meantime they would increase the sale value of his farm. Still doubting, Mr. Farmer had finally spent \$10.00 for a thousand thrifty white pine transplants and with the help of his hired man had planted an acre of the old pasture. He figured that he was not losing much anyway, just a few dollars in money and a day's time of himself and his man.

Now after six years, Mr. Farmer was delighted with results. It seemed to him incredible that those pines should have grown to be as tall as himself, as many of them were: and Prince Pine standing as straight as an arrow, was

head and shoulders above his brothers. Perhaps this is the reason why Mr. Farmer gave Prince his name. He had never told anyone the reason, but it may also have been because Prince was such a friendly fellow and always waved so gracefully when he saw Mr. Farmer coming to the pasture. Whatever the reason, it is certain that Prince and his brothers have brought joy to the heart of Mr. Farmer. He is so pleased with their growth that, this spring, he intends to increase his pine family, because he prefers to see green trees rather than barren rocks and parched grass in the old pasture.

W. J. Endersbee in
The Berkshire Farmers' Bulletin, March, 1927

TWO SUGGESTIONS FOR COLORING MAPS

"Recently, while visiting the District Forester's office at Springfield, I picked up an idea, regarding the coloring of maps, which I believe will be of value to our office. The process used is simple. Color is applied to black line prints or tracings with polychrome pencils. The color is then rubbed smooth and clear with a daub, dipped in gasoline. The darker colors are applied first."

E. C. Filler

"My method for coloring maps is somewhat different from Mr. Filler's: I use ordinary oil colors, thinned with turpentine to the desired shade, applied with a flat hair brush. After allowing the color to dry for a few seconds it is rubbed lightly with cotton to secure an even color. Usually one application is sufficient."

Alma Bishop.

Washington, D. C.

WHITE PINE PLANTING AND PROTECTION GO HAND IN HAND

Timber is a profitable crop. Idle acres produce no income and pay no taxes; forested acres bring money to the owner and prosperity to the community. Every farm should have its woodlot. There are approximately 2,000,000 acres of waste land in New Hampshire. Perhaps you have a few acres of idle or waste land that are producing no income. Why not plant some pine on these unproductive areas. The cost is very small. Trees can be obtained from the New Hampshire Forestry Department at a reasonable cost. Either 3 or 4 year old transplants can be bought for \$6.25 and \$7.75 per thousand respectively. These trees planted 8 x 8 will take approximately 800 to the acre. Two men ought to plant an acre a day. Three acres of open land would take about 2,500 trees. Three acres planted annually would in the course of 10 years reach a total of 30 acres with the cost easily distributed. Under the terms of the Walker Classification Law such areas, excepting the value of the land, could be exempt from taxation until they were producing 25,000 board feet per acre. There is plenty of encouragement for the individual to start a planting program. Why not start this spring? The time for setting out these trees would be just as soon as the frost comes out of the ground. And don't forget to protect these trees from blister rust by destroying all currant and gooseberry bushes in and around the planted area, otherwise your effort can be rendered futile.

Blanks for ordering trees can be obtained from the Blister Rust Agent at the Farm Bureau Office.

Merrimack County Farmers' Bulletin,
Concord, N.H. April, 1927.

DISTRIBUTION OF RIBES SUBSTITUTE, PRUNUS TOMENTOSA, BY THE OFFICE
OF FOREIGN SEED AND PLANT INTRODUCTION.

The plants of Prunus tomentosa which were sent out to the Elister Rust cooperators this spring were made up in sets three varieties to a set; 104 sets in all being sent out.

It is supposed that under some conditions selections of this cherry are self-sterile and will not bear fruit unless a bush of another variety is planted nearby. Hence the necessity of sending three kinds in each set. The plants included are propagations of selections grown from seed sent in from northern China and were selected because they bore heavy crops of desirable fruit. The plants were distributed to recommend^{ed} individuals whose names were reported from various sources, chiefly by officials of the Forest Service. The distribution was as follows:

<u>State</u>	<u>No. Sets</u>
Connecticut	9
Maine	9
New Hampshire	8
New York	10
Rhode Island	10
Massachusetts	11
Vermont	10
Pennsylvania	8
New Jersey	5
Michigan	9
Wisconsin	6
Minnesota	9

(signed) F. J. Hopkins,
Assistant Horticulturist.

P E R S O N A L S

Mr. John M. Corliss, Forestry Commissioner, N. H., and a member of New Hampshire's Blister Rust force, is at present assisting in quarantine work at Chicago.

* * * * *

Mr. George E. Atwood, Director of Bureau of Plant Industry in the New York Department of Agriculture and Markets, has just announced his retirement (on account of reaching maximum age of retirement on March 31). He will be succeeded^{ed} by Mr. B. D. Van Buren who has been associated with the New York Bureau of Plant Industry for 25 years.

* * * * *

Engagements:

Announcement has been made of the engagement of Miss Pearl Sawyer Calef of Haverhill and Germantown, Pa., to Carl Chamberlain Perry of Newton, Massachusetts, State Leader in blister rust control. Mr. Perry is a graduate of Harvard College, where he was a member of the class of 1912. No definite date has been announced for the wedding.

Miss Bettina M. Bateman of Whitman, Mass., has announced her engagement to Mr. Earle M. Brockway, blister rust control agent, of Brockton, Mass. Miss Bateman is a graduate of Whitman High School and of the Sargent School in Boston, Mass. Mr. Brockway is a graduate of the University of Maine, Orono, Maine, in forestry, and is at present building a house of English Cottage design in North Abington, Mass., where the couple will make their home. The wedding is to take place the latter part of June.

* * * * *

Appointments:

Miss Selma K. Millick, clerk-typist - Spokane, Wash, Effective Mar. 21, 1927.
Miss Alice Mary Fellows " " " " " Mar. 25, 1927.
Mr. Milton R. Edmunds, agent - Corvallis, Oregon. Effective March 15, 1927.
Mr. Dellmont R. Payne, agent - Spokane, Washington. Effective Mar. 8, 1927.
Mr. Carl E. Peterson, agent - " " Effective Apr. 1, 1927.
Mr. H. Ross Osborne, agent " " " Effective Apr. 11, 1927.
Mr. A. W. Hurford, agent - Providence, R. I. Effective April 15, 1927. Mr.
Hurford succeeds Mr. O. C. Anderson, who resigned on account of ill
health.

* * * * *

Resignations:

Mr. E. E. Tarbox, agent, stationed at Damariscotta, Maine re-
signed March 31, 1927.

Mr. Stanley W. Hamilton, agent, with headquarters at Lowville,
N. Y., resigned March 31, 1927.

Mr. P. E. Mellis, Junior Forester at Spokane, resigned March 17, 1927.

* * * * *

P U B L I C A T I O N S

Blister Rust

State of New Hampshire
Biennial Report of the Forestry Commission for the Two
Fiscal Years Ending June 30, 1926. Pages 110-117 incl.

Anon. American Forest Protection Week. April 24-30, 1927.
Eight page leaflet addressed to the Teachers of the State
of Maine. Illustrated. Control of Blister Rust occupies
one page of this leaflet.

Note: - This is a very creditable publication to put out for
American Forest Protection Week. Mr. Frost writes: "7,000
of these were sent to school teachers and 500 sent to service
clubs, etc."

Pine, White

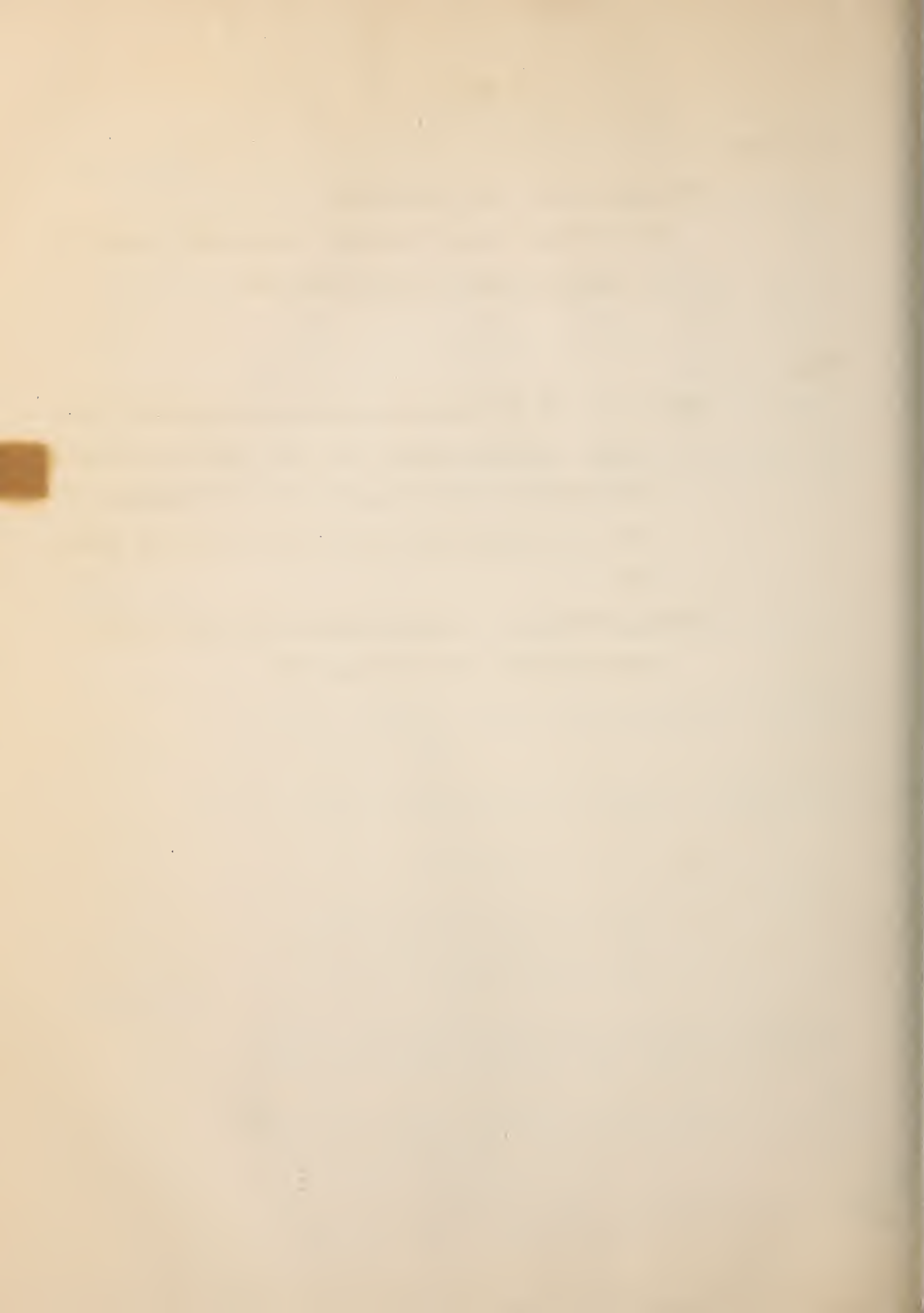
Endersbee, W. J. Meet Prince Pine.

The Berkshire Farmers' Bulletin, March, 1927. A story of a young white pine and the blister rust.

Ribes

Baird, W. P. In The Home Fruit Garden on the Northern Great Plains. Farmers' Bulletin 1522, Feb. 1927, pages 38,45. This bulletin is based largely upon results obtained at the U. S. Northern Great Plains Field Station at Mandan, N.D.

Twining, Frances S. A Western Currant (*Ribes glutinosum*). Nature Magazine, March 1927, p. 151.







BLISTER RUST NEWS



May, 1927.

Volume XI

Number 5

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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Roy G. Pierce.	Editor -	Washington, D.C.
J. E. Riley, Jr. Assoc.	"	Connecticut
S. D. Connor.	"	Maine
W. J. Endersbee	"	Massachusetts
T. J. King	"	New Hampshire
George E. Stevens.	"	New York
A. W. Hurford.	"	Rhode Island
W. E. Bradder.	"	Vermont
H. J. Ninman	"	Wisconsin
C. R. Stillinger	"	Western Office

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS
Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 11. No 5

MAY, 1927

DE SONG OF DE WHITE PINE

E. deFloochee.*

I was reed on de pape, print on Stat la Unee,
De boy call 4-H was work moch on de tree
Was plant up old field, poor pasture also
Who's Granpaw was clear up long tam ago.

Now de pape it was say, dees boy prune up de pine
Bees why? you was ask? For grow de more find.
Beeg clear log, maybe seexteen feet long,
Instead of poor ting, you sell it for song.

An dey mak de bon job, cot out de week tree
Was hold back de ash, de pine, an noder specie
For let in de light so good tree she is jump
De more as two feet, Sapree! she's fine stunt.

Somme peep, it was laff and say "It never pay"
For do all dees ting, now in my old day;
But not so de boy, bum by he was it may
An know bired in bush, not so good as in hand.

So he do leetle work on de wood lot--BaGar!
While he yong, full of pep, and not smok it seegar;
For he know de white pine, you give half de show
Will make it beeg money when man he is grow.

- - - - -

* E. D. Fletcher, former Extension Forester in New Hampshire
In The News Letter, N.Y. State College of Forestry at Syracuse Univ. March, 1927..

BLISTER RUST MEN START ERADICATION WORK IN LEBANON, N.H.

A crew of six men is now at work in the town of Hanover removing currant and gooseberry bushes to protect the white pine from blister rust. The crew foreman is C. C. Jackman of Lebanon and the crew members are mostly from this section of the state.

Last March the town of Hanover with more than 75 other towns in the state, appropriated funds for this work, in cooperation with the New Hampshire state Forestry Department and the U. S. Department of Agriculture, Bureau of Plant Industry.

Every one interested in seeing the control method used; knowing how the town and state funds are expended; and in becoming more familiar with this disease so fatal to valuable white pine growth, should see the crew work.

A. B. Elder, one of the selectmen of Hanover, is town inspector, and would be glad to have others go out with him to see the crew work. Geo. F. Richardson Jr., is blister rust control agent for this district.

The Union, Manchester, N.H. May 13, 1927.

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STATE LEADER PERRY BROADCASTS TALK ON BLISTER RUST

On Saturday, April 30, State Blister Rust Leader Perry gave an American Forest Week talk from Radio Station WNAC, The Shepard Stores, Boston, using as his subject "Keeping the White Pine Forests of Massachusetts intact by Combating the Blister Rust." The title of this talk was adapted from the following sentence in the proclamation of Governor Fuller, in which he recognized the week of April 24-30 as American Forest Week and designated April 30 as Arbor and Bird Day: "The forested area of this State must also be kept intact, and all reasonable means used to increase it when possible."

BLISTER RUST CREWS START SOON IN MERRIMACK CO. N.H.

It is expected that the County Blister-Rust Agent will start his control program during the first week of May. The voters in the various towns where work is to be carried on are, once again, urged to get out ^{with} the Blister Rust crews to learn control measures. They owe it to themselves because it is their money that is being spent. The Forestry Department desires it because it invariably leads to a better understanding, and makes converts to the work. Don't let another season pass without learning more about this important work.

Merrimack County (N.H.) Farmers' Bulletin
Concord, N.H. May, 1927.

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MASSACHUSETTS NOTES

All records for an early date of Ribes eradication in Massachusetts were shattered by Agent Roop and R. O. Gould, when they removed 36 cultivated Ribes in the town of Tyngsboro on April 7. Needless to say the bushes were not in leaf.

- - - - -
Secretary Reynolds of the Massachusetts Forestry Association met with the agents and outlined the status of the campaign for the establishment of town forests in Massachusetts.

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On Saturday (April 16) Agent Endersbee left for a field trip to Kittery Point, Maine, and Waterford, Vermont for the purpose of taking this year's "readings" on cankers in the infection areas at these locations.

C. C. Perry, Massachusetts.

EARLY DATE SET FOR RIBES ERADICATION IN FRANKLIN COUNTY, MASS.

Upon returning to Franklin County district, after three months' work with the State Leader in Boston, the first item on the schedule was a short field trip. This little run through the brush disclosed the fact that it was high time for work to get under way in this vicinity. Inspection of wild Ribes on high and low elevations showed, in both instances, that the leaves had developed enough so that they could be "counted". Wild gooseberries and black currants were noted in some abundance. Aecia were fairly popping through the bark, and unless all signs fail, the spores will be flying through the air two or three weeks earlier than last season. Active Ribes eradication work will be started in Franklin County on April 25.

G. S. Doore, Massachusetts.

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NEW YORK HOLDS ANNUAL SPRING CONFERENCE

The Annual Spring Conference of the New York Blister Rust Agents was held in Albany, April 6, in the Conservation Department rooms.

The conference was opened at 10 A.M. by Dr. H. H. York, who presided. Mr. W. G. Howard, State Forester, spoke along the lines of the new State reorganization of the Department of Lands and Forests. Mr. H. L. McIntyre, Supervisor of Forest Pest Control, and Mr. A. F. Amadon, former State Leader, also addressed the conference.

Those present included Dr. H. H. York, Mr. W. G. Howard, Mr. H. L. McIntyre, Mr. A. F. Amadon, Mr. E. W. Littlefield, Mr. J. D. Kennedy, Mr. G. E. Stevens, Mr. N. H. Harpp, Mr. H. G. Strait, Mr. H. A. Williams, Mr. J. W. Charlton, Mr. I. Bowlby, Mr. C. A. Baker, Mr. E. G. Woodward, and Mr. B. H. Nichols.

G. E. Stevens, N. Y.

DOCTOR W. A. MCCUBBIN PRESENTS PLAN FOR A BLISTER RUST SURVEY
THROUGH PUBLIC SCHOOLS OF PENNSYLVANIA

Dr. W. A. McCubbin, Chief Plant Pathologist of the Pennsylvania Department of Agriculture, paid a visit to the D. C. Office May 11, and presented an especially well formulated plan for a Blister Rust survey through the public schools of Pennsylvania. Doctor Taylor heartily approves the plan as a co-operative project and we are making ourselves busy getting out a colored illustration of infected Ribes leaves and other materials as our share of the work.

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PLYMOUTH COUNTY (MASS.) HOLDS TWO DAY FORESTRY TOUR

A two day Forestry Tour was held in Plymouth County recently. This tour was arranged by the County Agricultural Agent Mr. G. C. Norcross, assisted by Extension Forester R. B. Parmenter, and Blister Rust Control Agent Brockway. The first day was spent in the northern part of the county and the second day in the southern end.

In spite of the cold, blustering weather and a snowstorm during a part of the first day, there were 45 persons in attendance. Different woodlots were visited and demonstrations made of the importance of improvement thinnings, release cuttings, pruning, planting, etc. The details of blister rust control were discussed and the point was stressed that there should be no cessation in the planting of white pine, but that all pine plantations should be properly protected from the blister rust.

Previous to the tour, a demonstration was conducted at the farm of Leslie Clark in Middleboro. There was an attendance of 17 at this particular demonstration, several people coming as far as 45 miles to learn of the latest forestry practices.

April 20, 1927.

E. M. Brockway, Massachusetts.

MERRIMACK COUNTY (N.H.) BOYS AND GIRLS TO PLANT WHITE PINE ON TOWN LAND

There are several towns in the County, whose citizens are farsighted enough to see that before long one of New Hampshire's natural resources, namely, white pine will be exhausted, unless some measure is taken to replace it.

The towns of Concord and Hopkinton each have a tract of land which they are going to set out in pine this year, thus starting a future source of income for the town.

The boys and girls of this county responded very readily and offered their services. About 60 boys and girls will plant pine this year.

Merrimack County Farmers' Bulletin
Concord, N.H. May, 1927.

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AGENT ENDERSBEE PLANTS WHITE PINES IN NORTHERN NEW YORK

Last week, my cousin and I drove to northern New York, a distance of 330 miles from Great Barrington, reaching there Sunday night. From Monday to Friday we planted 20 thousand trees, 10 thousand white pines, 4 thousand red pines, 3 thousand white spruce and 3 thousand Norway spruce. This makes a total of 40 thousand, 16 thousand white pine and 4 thousand white spruce having been previously planted. At least 95% of those set out four years ago are growing nicely and averaged about 15 inches last year. The total cost of those planted this year was \$5.70 per thousand for the planting plus \$2.00 for the trees. I am inclined to think that planting figure is hard to beat. We paid \$4.00 a day for labor and figured our own time at the same rate.

May 6, 1927.

W. J. Endersbee, Massachusetts.

NEW YORK HOLDS SEVERAL FORESTRY AND BLISTER RUST DEMONSTRATIONS

A series of Forestry and Blister Rust demonstrations were placed in the armories at Albany, Glens Falls, and Whitehall during March, in connection with the Industrial Expositions conducted at that time.

At Albany, the Division of Lands and Forests had a splendid demonstration at the State Armory, during the week of March 21-26, at the Port of Albany Exposition. The booth was divided in four sections, each section representing some phase of Forestry. Blister rust, reforestation, forest fire, and Gypsy moth control were on exhibition. Brayco pictures, illustrating the work were shown, and often when an interested audience was in attendance, someone on duty would talk. Publications dealing with every phase of the work was given to the public, and a large number of people were told about the work. Many orders for trees were taken and a considerable number of names were secured of persons who desired blister rust inspection for their pines.

Although this Forestry Exhibit was displayed in such a large city, thousands of people came in from the neighboring country and learned something about forestry. Those on duty expressed the unanimous opinion that there was as much, if not more, interest shown at this demonstration than any ever put on.

Geo. E. Stevens. N. Y.

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COUNTY AGRICULTURAL AGENTS MAKE REPORT ON FIRST TIME ERADICATION

Mr. Geo. H. Collingwood, Extension Forester with the Department of Agriculture, has advised that the reports of county agricultural agents throughout the country have been summarized, and that they give the number of farmers who have attempted to control white pine blister rust for the first time as 585. This eradication work covered an area of 31,179 acres.

R. G. Pierce.

VERMONT PINE OWNER ERADICATES RIBES TWO YEARS BEFORE PLANTING

Three planting demonstrations, at which I was present, were held the past week, blister rust control being discussed at each meeting. An unusually good number were present at the Crowell place, April 19, in Westminster West, now owned by Hugh B. Houghton. Two years ago the Ribes were eradicated in preparing to plant the 20,000 white pine this spring. Mr. Manley R. Adams, who was crew foreman when the Ribes were eradicated, was also foreman on the planting job. The demonstration was held by F. M. Callward in cooperation with the Local Farm Bureau Agent and the Forest Service.

The other meetings attracted only small numbers, being in places hard to reach by auto.

April 22, 1927

S. V. Holden, Vermont.

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FORESTRY FOR BOYS' AND GIRLS' CAMPS

The first organized effort to send foresters into boys' and girls' camps to teach forestry methods as they relate to wild life, camping, hiking, and general recreational contact with the woods was made at the conference of the Society for the Protection of New Hampshire Forests held in Boston, November 27.

Dr. William G. Vinal, nature study expert, and Professor A. V. S. Pulling, both of the College, attended the conference. This meeting called together many camp directors and foresters, who outlined a program for presenting forestry as a part of camp instruction.

The first year the association will send out two foresters to boys' and girls' camps in the White Mountains to teach forestry conservation.

The News Letter. N.Y. State College of
Forestry at Syracuse Univ. March 1927.

Note:- Page Mr. Newman! Is blister rust control included in the program to be presented this season to the boys' and girls' camps in the White Mountains as one of the items in forest protection?

HARRY CAME EAST

Mr. Harry G. Lachmund, a son of the west and indigenous but not indifferent to California, touched base in Washington a few days ago and is now studying blister rust conditions in the Northeastern states. Mr. Lachmund is a western sparrow of the office of Forest Pathology well known to Blister Rusters of the west through his extensive studies of the rust in the Northwest. He came into the blister rust world in 1922 and ever since has pursued C. ribicola with such vim and vigor wherever it has occurred in the west that the poor rust has been unable to keep many of its secrets.

The rust has been present in the east 10 years or more longer than in the west. Mr. Lachmund's special interest in his visit to the eastern white pine region is to observe the more advanced development of the rust on some of the older outbreak areas. Accordingly, he plans to visit Ipswich, Kittery, Waterford, Littleton and other points in Maine and New York. Mr. Filler is showing him about at this time where the rust is in full bloom. Doctors Metcalf, Martin and Spaulding were included in the party as preferred baggage because of the valuable optics which Mr. Lachmund may need.

Speaking of infection, the party visited some white pine stands in Maine which caused pathologists, long acquainted with Eastern conditions, to wonder at the damage which can result from Blister Rust. We eagerly await the details!

The first open aecia in Massachusetts for the spring of 1927, was noted on April 11 in the town of Tyngsboro, Middlesex County, by Messrs. Roop and Gould.

April 26, 1927.

C. C. Perry, Mass.

NOTES FROM PLYMOUTH AND BRISTOL COUNTIES, MASSACHUSETTS

Ribes eradication work was started in Plymouth and Bristol Counties on April 18. Ribes had leaved out quite generally at that date. Control work in District III will be restricted almost wholly to the Bristol County section in an endeavor to complete work in that part of the District this year.

* * * * *

In anticipation of the observance of American Forest Week, 18 articles were sent to the newspapers in District III. In cooperation with the Massachusetts Committee of American Forest Week, 57 posters were distributed by the Agent.

E. M. Brockway, Massachusetts.

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BLISTER RUST NEWS INDEX FOR 1926 AVAILABLE

The index to our News Letter for the past year has been mimeographed and copies sent out to all on our mailing list at the time of forwarding the March number. If you did not get your copy of the Index, or if you desire any back numbers of the News Letter, including the Indexes for 1924 and 1925, write to the Washington Office.

Just a word to our new agents. If you are planning to carry on any particular phases of our work and need the opinions or results of others, as for instance, working with the young people, making exhibits, using lantern slides, etc; use the index to see what has been done along these lines.

R. G. Pierce.

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The spring in Vermont is at least three weeks in advance of last year. The leaves on Ribes are coming out and everything looks favorable to start crew work by May 9th and possibly by May 2nd.

S. V. Holden, Vt.

IF I WERE A WOODLOT OWNER

If I were a woodlot owner
And didn't know my ground
I would find the proper person,
And have him show me around.

If I were a woodlot owner
Well versed in forest lore,
I would practice those improvements,
Now considered such a bore.

If I were a woodlot owner
Of trees that are partly grown,
I would inventory my holdings
And discard all the drones.

If I were a woodlot owner
Of all sorts of commercial trees,
I would keep those most promising,
To respond to sun and breeze.

If I were a woodlot owner
Of the Prince of trees, the pine,
I would value it very highly
Far greater than any mine.

I would favor the stately pine
As befits its rank and grace,
And banish every obstacle
Attempting to take its place.

If I were a woodlot owner
And had it in my power
To study the forest cover
I would do so,--hour by hour.

W. J. Endersbee,
Berkshire Farmers' Bulletin
April, 1927.

INSPECTOR CORLISS FINDS CHICAGO GOOD PLACE TO LEARN TO CARE FOR "BLISTERS"

In a recent letter to the Washington Office, Mr. J. M. Corliss, who has been on quarantine inspection work at Chicago for the past three months writes:

"Before I started my work in Chicago, I asked to be placed where the work came the fastest and whoever was responsible for putting me here I assure you did a good job, because there is no possible chance of one losing interest. He could work 24 hours a day, 7 days a week, and then feel that he had not caught up with his work. I do not know how much of this field work you are acquainted with, but I would suggest in the interest of the work and all concerned that you just spend about two days out here when the season is at its best. I know you would appreciate it and I also know it would not be work that would make you quit; for we have all become proficient in taking care of blisters which have no regard as to where they appear, little toes, big toes, are all alike to the cobblestones that we have in this section. If you ever feel that you must walk the railroad ties, this is a good place to be taught.

J. M. Corliss

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WHITE PINE PREDOMINANT IN PENNSYLVANIA PLANTING

In the past 28 years 36,254,284 trees have been planted on the State forests of Pennsylvania. This number includes 21,417,427 white pines, 5,157,879 Norway spruce, and 3,476,004 Scotch pine. All but about 5 per cent are conifers. The areas planted total 427.2 acres. The cost of planting averaged \$10.81 per acre and \$8.59 per thousand trees. The number of trees planted annually was greatest during the period 1910-1919, inclusive, reaching its peak of more than 6,000,000 in the year of 1918.

Forest Worker. March, 1927.

MEET PRINCE PINE

(Continued from the April issue)

Prince Pine is the stately young tree in Mr. Farmer's plantation. He is such a vigorous growing tree that it seemed incredible that he should be sick, but ever since the warm spring sun began to thaw the sap in the trees a sore had been developing on one of his arms. He did not think much about it at first but lately he noticed that it was swollen and badly inflamed. The inflamed part was not exactly red like Mr. Farmer's arm when he had the boil last spring. Instead it was more of an orange color and tapered off into a sickly yellow-green. In a few places near the swollen part there were orange colored blisters which looked as though they were nearly ready to break open and discharge their contents. Prince did not know what to do to cure the sore but he was confident that Mr. Farmer could find a remedy.

That evening when Mr. Farmer came over to the plantation Prince showed him the sore arm. Mr. Farmer looked puzzled. "It looks somewhat like a bruise," he thought, "but what could have hit Prince to produce that swelling?" The cows could not have done it because they were fenced out and he had not noticed any snow or ice clinging to Prince as they did to some of those trees on the north side of the plantation. Then he noticed the blisters and wondered if something akin to blood poison had developed. "Perhaps a bee has stung you," he told Prince who was expecting his friend to solve the mystery at once. "I will see if any of the other pines are stung," he added lamely wishing to get away to consider the problem by himself and to avoid frightening Prince.

Mr. Farmer started off along the old stone wall. He had not gone far when a dead limb on a pine attracted his attention. Examining it closer he saw that it had the same kind of sore that Prince had, only in this case the sore was larger and more developed. The discolored bark extended from the base of the limb into the body of the tree. The swollen part was farther out on the

limb and between the swelling and the discolored portion was an area of orange colored blisters. On this tree they were larger than those on Prince and some were broken open. In pushing aside a healthy branch in order to obtain a better view, he was surprised to see a cloud of orange dust arise from the blisters disturbed by his action. "You're a tricky canker," said Mr. Farmer addressing the sore, "but there must be a way to get rid of you."

As he turned away from that tree he noticed a dead pine standing near the wall. Coming closer to it, he observed the tell-tale marks of blisters, this time in the body of the tree. "A direct hit to the body," said Mr. Farmer to himself. "It didn't have to eat its way along the limb to get into the body of this tree." He also observed the intense swelling near the center of the sore and the pinched and drawn appearance of the body just below the swelling, as though someone had drawn a belt very tightly at that point which left a depression when the belt was removed. The pine at this point reminded him of a spindle but instead of being smooth it was rough where the bark was cracked by deep furrows.

Proceeding along the wall to the end of the plantation, Mr. Farmer saw several more dead pines and many with blisters which scattered orange powder as he brushed against the trees in passing. Then he crossed the planting but found only a few with sores until he came out on the opposite side near the brook. Here he found almost as many sick trees as were along the wall. By this time he was thoroughly alarmed and knew that he must have help to save the life of Prince and the other sick pines. In fact his whole pine family might die for all he knew. Then he thought of the County Agent and decided he would telephone to him for advice. In his eagerness to reach home he nearly forgot to say a word of cheer to Prince and assure him he would do

everything possible to get rid of those blisters. As Mr. Farmer walked rapidly toward home, Prince speculated at his haste and did not realize until days later that his good friend was too depressed in spirit to tell him what he had seen.

W. J. Endersbee,
The Berkshire Farmers' Bulletin,
April, 1927.

Note:- Mr. Endersbee's article was well illustrated with two cuts 2 1/4 by 3 1/4 inches in size showing different phases of the blister rust. It is surprising how well the rust is shown in cuts of this size.

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PLANT INSPECTION AND QUARANTINE MATTERS IN NEBRASKA TO BE ADMINISTERED BY
STATE DEPARTMENT OF AGRICULTURE.

Mr. Myron H. Swenk, State Entomologist, in a recent letter to the Office of Blister Rust Control, writes concerning the new state law relative to nursery inspection, as follows:

"I may state that House Roll 538 has been passed by both houses of the Nebraska Legislature with the emergency clause, and has been signed by our Governor, so is now the law of the state. Under this new law, all matters of plant inspection and quarantine, both interstate and intrastate, are administered by the State Department of Agriculture of Nebraska, of which H. J. McLaughlin, State Capitol, is Secretary, and the State Entomologist of Nebraska is relieved of all administrative and regulatory work in connection with these activities, becoming an advisory officer only."

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For anything worth having one must pay the price, and the price is always work, patience, love, and self-sacrifice. No paper money, no promise to pay-but the gold of real service.-- John Burroughs.

NOT BOOZE - WHITE PINE

Mr. W. M. Pratt is having several thousand pine trees set on some of the pasture land of his fine farm in three towns in western Franklin County, Mass. A rather amusing incident occurred a short time ago when the enterprising state police made a thorough search of one of the trucks bringing in the young trees. The state police had been informed that a suspicious truck, supposed to have a lot of booze on it, was passing through western Franklin. After a thorough search no contraband was found. There was a smile all around after the inspection was completed. The truck went ahead to the Pratt farm.

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I well recall my first field trip with Mr. Hodgkins and his talk on the association of Ribes and other plants, but here we have a new association which may be of interest.

G. S. Doore, Mass.

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FOREST SERVICE PUTS OUT REVISED CHECK LIST OF THE FOREST
TREES OF THE UNITED STATES

The Washington Office of Blister Rust Control has recently received a small supply of the Check List of the Forest Trees of the United States, Miscellaneous Circular 92, which is being sent out to State and District Leaders. The Forest Service has informed me that there was a very small edition secured, hence they are unable to supply these in quantity. However copies may be secured from the Superintendent of Documents, Government Printing Office, at 40 cents a copy.

R. G. P.

A DOUBTING THOMAS.

When Thomas Jones of York County, Maines was advised in 1922, by the Blister Rust County Agent that he should examine his land and destroy all currant and gooseberry bushes because they spread blister rust, he refused to accept the advice. Thomas owned 20 acres of vigorous young pines of which he was very proud. He contended that the spread of this rust from currant and gooseberry bushes to pine was only a theory which he could and would explode.

Directly he secured currant and gooseberry bushes and planted them close-by many of his choice young pines and awaited results. All during the following year, while nothing apparently happened to his pines, he upbraided his neighbors for their foolishness in pulling up currants and gooseberries. It was not necessary. He invited his neighbors to look at his pines near the gooseberries and see for themselves. Fine, healthy looking specimens they were too at the end of that first year.

During the fall of the second year Thomas thought of his pines and went to examine them. A few of the limbs hanging close to gooseberries showed little orange-yellow colored spots. 'I wonder', thought Thomas. 'I'll keep closer watch'. During the next summer months those orange spots enlarged until many of them encircled the limb and killed the tip. Meanwhile numerous other spots became visible. The fourth year Thomas found several dead pines all due to development and growth of those little orange spots. Nearly every pine now in a radius of 100 feet of those planted bushes had either orange spots or dead branches. About this time Thomas found and read the discarded circular given him by the agent. The circular told all about those spots and dead branches. 'This checks up with what the agent told me', thought Thomas. 'I must get rid of those bushes'.

Straightway he set to work and destroyed them. Then he carefully searched the remainder of his land for wild bushes and destroyed what he could find. In the course of this examination he observed that whenever he found the currant or gooseberry bushes near pines he also found orange spots or dead limbs and occasionally dead pines.

Thomas no longer doubted.

NOTE: The foregoing narrative is based on an actual happening which can be verified thru the Maine Forestry Service, Augusta, Maine.

W.J.Endersbee, Agent,
Blister Rust Control.

P E R S O N A L

Randall Has Joined the Staff of the U. S. Forest Service.

Charles Edgar Randall, Jr., has been appointed to the Washington staff of the United States Forest Service for work in the preparation of press material. After graduation from Leland Stanford University Mr. Randall went to Oregon Agricultural College as a teaching fellow in botany, and later he served nearly three years with the Bureau of Plant Industry in blister rust control work. He has had several years of newspaper experience in Washington and elsewhere.

* * * * *

Mr. Clarence C. Strong, Spokane, Washington, was promoted from Junior Forester to Assistant Forester. The appointment was effective March 16.

* * * * *

Watch the cooperation in Saratoga County (N.Y.) speed up. Mr. Baker bought a new chevrolet.

* * * * *

It is very evident that Mr. Bowlby finds the vicinity of Glens Falls, (N.Y.) very attractive.

* * * * *

Mr. S. W. Hamilton resigned, April 1 as blister rust control agent of Lowville (N.Y.) district to accept a position with a Park Commission in Detroit, Michigan. Mr. Hamilton was employed only nine months in this state, but during that time did excellent work and promised a good future in Blister Rust Control. Although he was employed here but a short time, the Agents join in extending him best wishes for the future in his enlarged field of opportunity.

Mr. G. M. Whiting former blister rust agent at Spokane, Washington, was appointed collaborator May 2.

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Agent J. D. Kennedy, headquarters Hudson Falls, N.Y., has been appointed Assistant State Leader. Mr. Kennedy will now be located at Albany, N.Y.

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Miss Myrtle L. Cummings, clerk in the Washington Office, was married on May 1, to Mr. Enoch Marvin Dowdy of Moscow, Idaho. The wedding took place at her home in Lyon Park, Virginia.

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Mr. Roy G. Pierce left Washington May 9, accompanied by Department photographer Mr. C. J. Brygger, for a two weeks' trip to New England. Mr. Pierce hopes to secure some excellent photographs of damage to white pines caused by the blister rust, and photographs of the various species of currants and gooseberries.

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Mr. Fred C. Frost, formerly of the General Accounting Office, was transferred to the Washington Office April 23. Mr. Frost will be in charge of the File Room.

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Appointments

Mr. Llewellyn Moore, agent North Bridgton, Me., effective May 2.

Mr. Percy A. Walker, agent Augusta, " " "

Mr. Manley R. Adams, " Portland, " " "

Mr. Arthur Petersen, " " " " "

Mr. Willis S. Kimball, " Augusta, " " "

Appointments

Mr. Laurant C. Pingree, agent, Bridgton, Maine, effective May 2.

Mr. Fred P. Yeaton, " Auburn " " May 9.

Mr. Edwin E. Stuart, " Boise, Idaho, " May 2.

Mr. Rheuben L. Wolcott, " " " " "

Mr. H. Daugherty Lyman, " Berkeley, Calif. " "

Mr. John M. White, " Wiscasset, Maine, " " Mr.

White succeeds Mr. E. E. Tarbox, who resigned March 31.

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Dr. S. B. Fracker, State Entomologist of Wisconsin, called at the ^{Washington} office May 14 to discuss the cooperative blister rust control work in his state.

P U B L I C A T I O N S

Pine, White

Cline, A. C. and C. R. Lockard. Mixed White pine and hardwood.
Harvard Forest Bul. 8 (1925) pp. 67, figs. 13.

Endersbee, W. J. Meet Prince Pine.

The Berkshire Farmers' Bulletin, April, 1927. A story of
a young white pine and the blister rust.



BLISTER RUST NEWS



June 1927.

Volume XI

Number 6

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control



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T. J. King. . . .	"	New Hampshire
George E. Stevens	"	New York
A. W. Hurford. .	"	Rhode Island
W. E. Bradder . .	"	Vermont
H. J. Ninman. . .	"	Wisconsin
C. R. Stillinger.	"	Western Office

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS
Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 11, No. 6.

June, 1927.

HELLO AGENT

Boys will be boys; but they will also be men, the men of the future. It is reported that in New Hampshire the 4H Boys and Girls Clubs (mostly boys I imagine, belonging to the forestry club) planted 166,000 pine trees, mostly white pine, this spring and established thereby a new record.

This is a very creditable record for tree planting. When it is remembered that each of these boy planters received a circular detailing the planting project and that protection from blister rust is one of the points stressed where white pine are planted, it is realized that the men of the morrow are getting blister rust instruction in their impressionable years.

Can cultivated red currants cause damage to white pine? Can they! Look up the write-up on the infection area in Conner's district at Freeport, Maine.

State Forestry Nurseries are cooperating in fine shape, not minimizing blister rust possibilities, but frankly showing how protection can be given the millions of white pines they are sending out yearly.

Ribes pulling had a bad start this spring, didn't it? Early warm weather gave promise of early protective work, but rains in May delayed the crew work considerably. I'll bet that it rained on more than half of the days in May in New England.

Ribes Bill

INFECTION AREA AT FREEPORT, MAINE

Heavy Pine Infection

In the town of Freeport, Maine in Cumberland County, a serious infection on native white pine was found in the spring of 1926 by Scout C. R. Marston. A detailed study of this plot was made on January 21, 1927. The data obtained show the severity of the infection. The area of the plot is one third of an acre, the number of white pine trees 151, and the average height of the trees 24 feet. 132 or 87% of the total number of trees were infected. 12 trees were dead, 73 dying, 85 had stem infections. The age of the infection is 13 years, the oldest canker dating back to 1914. The highest per cent of infection took place in 1916, 1917, and 1918.

Photographs were taken of a number of the trees in the plot on May 18, 1927. Aerial pustules were found on numerous pines, a number of the trees being practically girdled on the main trunk. Several of the trees 6 to 8 inches in diameter and 18 to 24 feet high had been girdled on the trunk to such an extent that they had become weak at the point of girdling and the top had broken off. One tree, particularly, was noted which showed the severest infection. This tree was 9 inches DBH, and 26 feet high. Only one large branch was living, and this had three separate cankers on it. The top was dead, being killed by cankers on every branch, rather than by girdling of the main trunk below the branches.

Cultivated Red Currants Probably the Cause.

An apple orchard adjoined the pine, being separated only by a garden wall, and in the rows between the apple trees there were 385 cultivated red currants of fairly large size. At the time of the discovery of the bushes in June, 1926, the red currants were very heavily infected. No rust was found on a short row of cultivated gooseberries growing approximately 250 feet away from the infected pines. Only one native gooseberry (*Ribes hirtella*), a small one, grew along a stone wall near the pine. As far as can be ascertained from the owner, no European black currants have been growing on the place. Because of this evidence it seems that the cultivated red currants must be held responsible for the heavy infection to the pines growing just over the garden wall.

Sprouts Appear After Ribes Eradication

The owner, on the advice of the blister rust control agent, removed all of the red currants, in the month of August, pulling them out by means of a horse, and chain or rope. This method of destruction of the bushes was probably the simplest and cheapest, since the bushes had fairly large crowns and were deeply rooted in the light sandy soil. In practically every case the bush with the crown and some roots were pulled out.

An examination of this plot was made on May 18, 1927. A number of the roots were found exposed in each of the holes observed, where the currants had been removed. Some of the roots were protruding from the soil for a length of

from 6 to 10 inches. In no case were sprouts observed rising from these roots, though it is possible that sprouts may arise later from them. The plot should therefore be kept under observation this summer.

Sprouts, however, were observed in the grass near the sites of six of the old bushes. These sprouts had sprung from branches which had lain on the ground several years and had taken root. When the large bush had been pulled out the branch broke off, leaving the rooted end in the ground at a distance of from 2 to 3 feet from the old crown. The finding of these sprouts shows that too much care can not be taken in checking over such eradication work.

S. D. Conner and R. G. Pierce.

LEADER OF CAMP FIRE GIRLS IN MICHIGAN BECOMES INTERESTED
IN BLISTER RUST CONTROL

A letter was recently received from L. M. Palmer a student at the University of Michigan who is a leader in the Grand Rapids, (Michigan) Camp Fire Girls Camp, which shows how educational work in blister rust control can spread. Credit must be given to Doctor Dow V. Baxter of the University, formerly one of our co-workers, for the suggestion to write this Office. A portion of the letter follows:

"During the summer I work in the Grand Rapids, Michigan Camp Fire Girls camp. They have about fifty acres of land covered with second growth including many hundreds of white pine trees and seedlings. On the same territory I have observed any number of wild gooseberry bushes. As a forestry project for the girls during the summer along with their nature study I thought it would be a good scheme for them to remove the gooseberry bushes.

"Over five hundred girls use the camp in the summer. For them to better understand why the rust should be prevented charts and literature on the subject would be desirable."

R. G. Pierce.

VALUE OF TAGGING INFECTED TREES ALONG HIGHWAYS

Calling on four pine owners today, I asked them if they had ever seen the spring stage of white pine blister rust. Three answered they had seen a number of infected trees tagged on certain roads in this town and after examining closely they had gone into their own lot and found the same thing on their white pines.

Arthur J. Lambert, Maine.

STATE NURSERIES IN MAINE AND VERMONT WARN TREE PLANTERS
OF NEED OF PROTECTION FROM BLISTER RUST

Maine

The State Forest Nursery at Orono, Maine, prints the following paragraph on its regular stationery, and on post cards acknowledging orders of trees:

"WARNING TO PLANTERS OF WHITE PINE--In order to protect white pine plantations from blister rust, and assure the trees, reaching maturity, it is considered vitally important, by the best authorities on the subject, to destroy all species of CURRANTS and GOOSEBERRIES, both wild and cultivated, from the areas to be planted; and for a distance of from 100 to 600 yards about the plantation.

BLISTER RUST --Does not spread from pine to pine. It can be prevented by eradicating all currants and gooseberries."

Vermont

The Vermont Forest Service has printed an attractive blue slip which is sent to Purchasers of Nursery Stock from the State Nursery entitled, "Notice to Forest Tree Planters.

- "1. Remove trees from box at once, cut strings on the bunches and "heel-in" the trees in moist soil.
 2. When planting, keep the roots moist. The trees should be planted to the same depth at which they grew in the nursery. Space trees six feet apart.
 3. The trees in forest plantations are exempt from taxation for a period of thirty (30) years, provided the owner does not cut or cause to be cut such timber before the expiration of thirty years. Also, PROVIDED the owner files with the town clerk before the thirty-first day of December of the year in which the planting is done, a sworn statement of the location and acreage of such plantation. Land on which such timber is grown shall be taxed on its value as land alone.
 4. WHITE PINE TREES, should not be planted within 900 feet of cultivated or wild currant and gooseberry bushes. The White Pine Blister Rust Disease spreads from the leaves of these bushes. White Pines, both large and small, are killed by the Blister Rust Disease. Protect your White Pine by the eradication of currant and gooseberry bushes.
- For further information address Vermont Forest Service,

R. M. Ross, Commissioner of Forestry,
Montpelier, Vermont."

In this connection, note should be made of the blister rust clause in tree order blank of the New York Conservation Commission, which was reproduced in the February, 1927 issue of the Blister Rust News on Page 378.

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Edit:- Probably other states than the three above mentioned have clauses in their tree selling contracts, or have notes of Warning to Pine Planters concerning necessary protection from the blister rust. The Editor would be glad to hear of them.

R. G. Pierce.

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RHODE ISLAND NEWS

Eradication work was started April 28 in the town of Smithfield. Four scouts and a foreman are employed. The work is being carried on by using the strip method in swamps and by scouting stonewalls, forest and open areas. From April 28 to June 1, 7,387 Ribes were eradicated and about 3,000 acres covered. During the month of May, out of 200 working hours 43 hours were lost because of rain. It rained $21\frac{1}{2}\%$ of total working time.

* * * * *

The old State Board of Agriculture has been reorganized and a Department of Africulture created. It is under the New Commissioner, Professor Harry B. Lewis. Professor Lewis is also President of the National Poultry Council.

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EVERY LOT A DEMONSTRATION AREA IN BOOTHBAY, MAINE

It has been my experience in the past years when asked if white pine blister rust was in the locality, to say "Mr. Brown has a bad lot." Mr. Brown might live a number of miles from the interested owner who would not worry much about his pines, as it had not struck home yet.

Here in Boothbay blister rust can be found in every lot and when asked about the extent of damage and location of same all I have to say is, "You have plenty of it on your own lot, take a look at the trees I have tagged".

Arthur J. Lambert, Maine.

VERMONT PUTS CUT NEW B. R. 1.

B. R. 1

No....

BLISTER RUST CONTROL--VERMONT
U. S. Department of Agriculture
Bureau of Plant Industry
Vermont Forest Service
Cooperating

INTERVIEW AND INSPECTION

Owner.....Date.....
P. O. Address.....
Location of Pine:Town.....Block.....Plot.....
Stand-Natural.....Planted.....Acres pine over
20 yrs.....Under 20 years.....Est. acres to erad....

The reverse
side is for the
Time Record of
Men on Ribes

FOLLOW UP EDUCATION RECORD

Date	Nature of Effort	Memo
.....
.....
.....
.....

Eradication and
for Recording the
Acreage Worked
and Number of
Ribes bushes
destroyed,

COOPERATION (How).....Date Secured.....

MEMORANDA

.....
.....
.....
.....
.....
.....

CHECKS ON ERADICATION WORK

Date:	By Whom	Est. ft of L.S.:	Rating of:	Man Hrs.:	Year to be
:	:	:Left per Acre	: work done:	spent	: Reworked
4-22	Holden	15	Good	5	1932
.....

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NEW YORK BLISTER RUST FOREMEN'S SCHOOL.

The third annual field training school for prospective blister rust crew foremen was held at Corinth, N.Y., during the week of May 2. From the list of applications received during the winter, 24 men were selected to report for this training.

Dr. H. H. York, New York State Forest Pathologist, was on hand the first two days and gave detailed instructions concerning the life history of blister rust. Each man was asked to submit a paper outlining the important stages in the life history of the blister rust. These papers proved valuable in checking up on each man's understanding of the disease.

Field conditions were just right for doing crew work and observing blister rust in the fruiting stage. Detailed instructions were given in all types of eradication from stone wall scouting with one and two man crews up to full crew work in abundant ribes type. Each prospect had an opportunity to act as foreman of a crew.

At the conclusion of the training on Saturday, 15, of the men were sent to the various blister rust agents to begin eradication work on private land. A crew of five foremen was put to work on state land to be held in reserve for use as the agents need them.

The following men from the Albany office were present at various periods during the week: H. L. McIntyre, Dr. H. H. York, Geo. E. Stevens and J. D. Kennedy. Agents Harpp of Warren County and Baker of Saratoga devoted most of the week in helping to train the men. Agents Woodward, Bowlby, and Charlton were present for a short period. Assistant Agents Raymond Paige and Smith Hastings were on hand during the entire week and gave valuable help in crew instruction.

J. D. Kennedy, N. Y.

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MAINE FORESTERS VISIT LOCAL INFECTION AREA

Mr. W. O. Frost, Maine State Leader, has recently written me that Mr. E. E. Lauderburn, Forester for the Pejepscot Paper Company had visited the Freeport, Maine, infection area with me and that the damage caused by the blister rust to the pine impressed him greatly. Mr. J. B. Sargent, Forester for the Great Northern Paper Company accompanied Mr. Frost on a visit to see the blister rust infection in the pine plantation of the Augusta Water Company.

Roy G. Pierce.

PRINCE PINE LOSES A LIMB

Prince Gets Discouraged

Prince Pine, the vigorous young tree in Mr. Farmer's plantation, was discouraged. It had been several days since he showed Mr. Farmer his arm which he knew was getting worse because the sore was larger and appeared to be eating its way into the body. Mr. Farmer had promised to get help and Prince wondered why he had not returned.

Mr. Farmer Takes Action

Mr. Farmer, however, had not forgotten Prince and the other pines. The very day he saw the blisters on Prince and found several pines dead, he telephoned to the County Agent for help. From Mr. Farmer's description of the trouble the County Agent immediately recognized the symptoms of blister rust and advised him to consult Dr. Rust who is the county specialist in that disease. At Dr. Rust's office Mr. Farmer learned that the doctor would be unable to call for several days because of appointments already made with other pine owners. Thus it was that help was delayed in coming to Prince and his brothers.

Prince's Trouble Solved

When Prince saw the doctor and Mr. Farmer entering the gap in the stone wall he drew a sigh of relief. He had confidence that Dr. Rust would be able to ease the pain in his arm. As the two men approached he heard the doctor explaining the case. He learned that he had the blister rust disease and he was frightened when he found out that many of his brothers had already died from it. Mr. Farmer had not told him about those deaths. The doctor came up and examined him and advised amputating the infected limb. It was the only hope of saving his life. If the limb were left on, the disease would progress into the body of the tree and that meant certain death to a tree so young. With Mr. Farmer's permission, the doctor took a sharp knife and cut the limb off near the body. He explained that it was necessary to remove several inches of the apparently healthy bark near the blisters because the rust had already advanced into that part even tho one could not see it. In dense pine growth it is not practical to cut out the infected parts of a pine but the method may be employed successfully to conserve pines of special value. Mr. Farmer's attachment to Prince Pine made it imperative that his life should be saved at any cost just as any home owner would strive to save his favorite shade or ornamental trees from disaster.

What is Blister Rust?

Dr. Rust then went on to tell more about the rust. He said it was a disease caused by a fungus, a parasite, which lives in the bark of white pines. One pine cannot contract it from another, however. In this respect it is not contagious. The infection comes to the pines, in the form of very tiny spores, from the leaves of a currant or gooseberry bush. This

is because the fungus grows also in the leaf tissues of these bushes. The doctor explained that spores may be likened to seeds since they function in the same manner. The orange colored dust which Mr. Farmer had already seen falling from the blisters on the pines was really a cloud of these spores. They could do no harm to other pines but would infect currant and gooseberry bushes.

Poor Neighbors!

At this point Dr. Rust noticed a gooseberry bush which grew near the wall. Going up to it he showed Mr. Farmer several small brown spots on the under side of a leaf. They looked at other leaves and found numerous spots on all of them. These spots, the doctor explained, consist of the spores which infect the pines. One spot might produce millions of seeds, more than enough to infect and kill every pine in the plantation. They are carried to the pine by the wind and many that lodge on a pine needle, find their way thru tiny openings which the pine uses in breathing. Once these spores gain entrance to the needle they germinate and grow like any other plant. Very fine, hair-like rootlets penetrate the living tissues and drink the sap which the pine needs for its own growth. As the rootlets grow in size they push the bark out, producing a swelling and as the sap becomes exhausted the bark dies. "That", said the doctor, "is the process that has been taking place in this limb of Prince Pine for more than a year now."

Prince, who no longer suffered any pain since the doctor cut off the limb, had listened attentively to the narrative. He now began to worry about the Gooseberry bush, his neighbor, over near the stone wall and wished very hard that it would move away.

W. J. ENDERSBEE

In next months issue - Prince Pine loses his Neighbor the Gooseberry Bush.
From The Berkshire Farmers' Bulletin, Mass. for May, 1927.

A GREEN MOUNTAIN EPISODE

I recently signed up the job of protecting the pines belonging to the McConnell Rest Home for aged teachers at Brandon, Vermont. I had tried for some time in the past to secure the cooperation of the trustees of the Home to save the fine stand of young pine on the property. They complained about lack of funds to pay a crew and thought up other good excuses, but no good reasons. What they really lacked was a vital interest in the property. I finally found that a local lady of wealth was interested in the newly founded Rest Home, and I explained the matter to her. She promptly donated the necessary amount to clear up the Ribes.

Now it seemed to me that as the pines were young and the Ribes large and plentiful, and as the rest was quite bad in spots that she was practically making the Rest Home a present of that pine lot, for it would surely

have been destroyed had those big gooseberry bushes been left, many of them in open pasture adjoining the lot.

A little later I met one of the Trustees on the street and asked him if he had ever heard of anyone receiving a present of something which they already owned. He said he hadn't; in fact it was an impossibility. We then talked over the work to be done on the pine lot and visited the area together. While looking at blister rust cankers and some regular gooseberry trees, I explained my riddle and he agreed that although it sounded like a paradox, still in view of what we saw on the pine lot, it was a fact.

W. E. Bradder, Vermont.

June 2, 1937.

DEPARTMENT YEARBOOKS AVAILABLE

The Department of Agriculture has recently come into possession of an extra supply of yearbooks, through the release of Congressional Quotas. Stocks on hand are as follows:

	<u>Copies</u>
Yearbook for 1917	1,100
1918	2,600
1919	600
1921	140
1922	750
1923	1,500
1924	1,050
1925	3,400

Some of the Agents in the past year have written to the Washington Office for certain yearbooks and have not been able to secure them. If any of the yearbooks listed above are desired, application should be made for them direct to the Office of Information, Department of Agriculture, Washington, D. C.

Roy G. Pierce.

BLISTER RUST AGENT IN THE ROLE OF VILLAIN

or

DO TALKS ON BLISTER RUST PAY

If ever there is a debate between blister rust control agents as to whether or not talks on blister rust should be given, I have a good point for the negative. Last December I gave a talk at a meeting of the Templeton Woman's Club, stressing the importance of the removal of cultivated Ribes in that town.

One evening, sometime later, I received a call from their committee on the annual play and was asked to take the part of the villain. Now, I don't know whether to take this as a compliment or an insult, but they seemed a little bit too sure that this was just the part for me. At the first rehearsal it seemed to me that they put a little too much feeling into the names they were obliged to call me, and I'm beginning to think that this is simply their method of getting even for the loss of their cultivated Ribes. Well, it's all in the day's work.

Wm. Clave, Massachusetts,

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WHY QUARANTINES ARE NECESSARY

On May 3, while driving over a road near Warrensburg to look up some eradication, I passed by a road house where they serve dinners and entertain tourists, and passing there, I noticed the Proprietor of the place, together with his hired man, setting out white pine trees in front of the building along the roadside.

The trees were about six foot high and one of them, looking rather sickly, aroused my curiosity. I therefore stopped and got out to examine the trees and upon so doing found five out of fifteen infected with the blister rust and three of the five in the fruiting stage. I called the attention of the Proprietor to these infected trees and then told him something of the blister rust disease. The infected trees were moved and destroyed.

This case, I believe, is similar to many other cases where people transport or carry infected trees and shrubs from place to place and it shows the necessity of having the interstate quarantines and the need of similar restriction within the State.

E. G. Woodward, New York.

RUST

FORECAST RECORD YEAR IN BLISTER/CONTROL IN MAINE

The office of the Maine Forest Service reports that the field work for controlling the white pine blister rust for this season has begun, and that a record year is expected, as more towns have appropriated funds for eradication than ever before.

Control work is now under way in the counties of Androscoggin, Oxford, Cumberland, York, Sagadahoc, Kennebec and Lincoln, 51 cities and towns in these counties having voted funds for the work.

The cities and towns are Bridgton, Otisfield, Sebago, Standish, Windham, Scarborough, Turner, Minot, Mechanic Falls, Porter, Brownfield, Denmark, Stow, Hiram, Norway, Paris, Albany, Stoneham, Bethel, Andover, Hanover, Roxbury, Mexico, Dixfield, Canton, Hartford, Summer, Buckfield, Hebron, Rumford, Readfield, Wayne, Bath, Gorham, Raymond, Freeport, New Gloucester, Baldwin, Biddeford, Kittery, Alfred, Litchfield, Monmouth, Winthrop, Boothbay Harbor, Boothbay, Wiscasset, Bristol, Alna, Edgecomb, and Jefferson.

Six more towns appropriated money for this work this year than for 1926 and the amount appropriated exceeds that of last year by nearly \$1,000.

W. O. Frost, state leader in charge of the eradication of the white pine blister rust, reports that S. D. Conner of Portland will be in charge of the work for Cumberland and York Counties and he will be assisted by Arthur Petersen, Arthur Cox, Manly Adams, Frank Mitchell and Arthur Sullivan.

Oxford County will be in charge of D. S. Curtis of North Bridgton and he will be assisted by L. R. Moore, F. A. Walker, C. R. DeGoster, J. H. Curtis, P. S. Seavey, L. C. Pingree and P. Beckler.

J. H. Kimball of Auburn will be in charge of the work in the Counties of Androscoggin, Sagadahoc and Kennebec, and his assistants will be E. P. Yeaton, R. G. Newman and E. A. Hunton.

"The money appropriated by each town will be used to hire a man to assist the pine owners in the eradication work", continued Mr. Frost.

"Over 50 of these men will be thoroughly trained in the identification and habitat of the various kinds of wild currant and gooseberry bushes, thereby being a great help to the pine owners in destroying these blister rust-carrying plants. Once these bushes are removed there will be no further spread of the disease."

From the Portland Press Herald, 5/23/27.

TOWN CONSTABLE AS FOREMAN AT BOOTHBAY, ME.

I have been fortunate in finding for a foreman in this town, a man that is regarded as conscientious and known by everyone. He is also the local constable, and whenever he calls up a pine owner and says he will be over in the morning to work on his lot, the owner makes it a point to be there.

Arthur J. Lambert, Maine.

EDUCATIONAL WORK WITH BOYS' AND GIRLS' CAMPS
IN THE WHITE MOUNTAINS

Mr. William M. Harlow of the New York State College of Forestry at Syracuse University, will be engaged this summer in pioneer work with boys' and girls' camps in the white mountains. This work is being done under the auspices of the Society for the Protection of New Hampshire Forests.

Forester

In this connection Mr. K. E. Barraclough, Extension/for New Hampshire, writes on June 1, 1927:

"I note in the May issue of the Blister Rust News (you see I still read the Blister Rust News) that you wondered if Blister Rust Control was included on the program that was to be presented this season to boys and girls camps in the White Mountains. I attended the meeting held in Boston last November and Blister Rust was one of the subjects that was decided upon to be considered in forest protection."

Roy G. Pierce,

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GYPSY MOTH PARASITE IS NOT A BLISTER RUST ENEMY

W. O. Frost of the Maine Forest Service, State leader of blister control, said Monday that he had been advised by a number of his agents that certain pine owners have the impression that the parasite (*Anastatus Bifaciatus*) recently planted by the State Department of Agriculture for the destruction of the gypsy moth, is also a blister rust enemy. Mr. Frost wishes to correct this erroneous impression.

White pine blister rust is not caused by a bug, worm, moth, caterpillar, or fly, but is caused by one of the group of plants called fungi, and is a disease of white pines, and currant and gooseberry plants," said Mr. Frost.

"The disease is reproduced by spores which correspond to the seeds of other plants and have the same function," continued Mr. Frost.

"Blister rust cannot spread from pine to pine but is spread to pine trees by all varieties of currant and gooseberry bushes within 900 feet of the pines. The removal of these bushes is the one and only way to control blister rust."

Kennebec Journal - June 1, 1927.

BROOKLYN BOTANIC GARDEN RECEIVES BLISTER RUST SPECIMENS

Doctor Arthur H. Graves, Curator of Public Instruction of the Brooklyn Botanic Garden writes under date of May 17:

"We received the specimens of white pine blister rust a few days ago in splendid condition, and are indeed pleased

with them. I think that this is a fine method of preservation - in formalin I take it - and it insures a permanently natural appearance."

Note:--Dr. Graves in his capacity as Curator of Public Instruction has a very wide field. Teachers frequently meet in the auditorium of the Garden for special lectures on botanical subjects. They in turn carry the information to their pupils. Classes of pupils from nearby schools also visit the Garden at various times during the year. Material of a botanical nature is also collected at the Botanic Garden and sent out to various schools in the city upon request.

The specimens referred to above were collected by Mr. J. E. Riley, Jr., and the Connecticut Agents in Litchfield County, and were preserved in a glycerin-formalin solution which consists of 10% glycerin, 2% formalin and 88% water.

Roy G. Pierce,

ANOTHER SERIOUS INFECTION AREA LOCATED IN MASSACHUSETTS

An infection area recently found by Agent Doore in the town of Rowe-District VII - Massachusetts, has all the ear marks of being the oldest and most serious infection area yet located in the State. The area is not extensive, covering only about an acre and a half. A study of this area is now being made by Messrs. Hodgkins and Doore, and further details will appear in the News at a later date.

May 25, 1927.

G. S. Doore, Massachusetts.

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WET WEATHER RETARDS ERADICATION WORK IN MAINE

Mr. W. O. Frost, writing on June 1, states that eradication work in Maine is greatly hampered by wet weather. This will be shown up in our eradication figures for the month. The agents, however, are buckling to their jobs and will make a good showing in acreage protected from the blister rust through Ribes eradication when the season's total is summed up.

PRATT OF HOLDERNESS SAYS THERE IS GOOD MONEY IN GROWING WHITE PINE

White pine is one of the best paying crops that can be raised in New Hampshire, according to O. M. Pratt of Holderness, a practical forester whose experiments with white pine have extended over half a century and brought him to the attention of noted foresters and scientists all over the world.

There was never a better example of a prophet better known abroad than in the home town. "Pratt of Holderness" he is called at Harvard and Yale as well as at Washington, and white haired professors come to Holderness to learn of Mr. Pratt. They come from Norway and Sweden, from England and Germany, and from forestry schools all over the world to learn about growing white pine. Mr. Pratt receives them all modestly and shows them over his estate.

He first settled in Holderness in 1900 and began practical forestry when he supervised the cutting of some white pine, specifying that nothing could be cut which was less than 8 inches in diameter. Twenty-five years later the same ground yielded more than it had before.

There are a number of things about white pine which he firmly believes in:

"In the first place, there is good money in growing white pine. I believe that it is one of the most important branches of New England agriculture. Secondly, trees should be carefully pruned and thinned. . . and the large ones should be cut scientifically. For example, I think it extremely important that the woodlot owners in New Hampshire be taught that it is never advisable to cut anything less than 8 inches in diameter.

"No farmer can afford to let his woodlot be slashed off and no lumberman can afford to cut small stuff. If the plan is followed of cutting the big trees and leaving the small ones to grow, in a few years the farmer/^{will} find that he has a permanent and paying crop."

Among the interesting exhibits which Mr. Pratt has is a cross-section of pine 12 inches through which he grew in 17 years. He has definitely shown that trees should be pruned close to the trunk, and as high as sixteen feet from the ground, and that in New Hampshire where there is a stiff tax on growing timber it is best to cut the large and let the small trees grow.

Although white pine is very low in price today, Mr. Pratt gets \$100 a thousand for the fine timber which he grows on his place and saws at his own mill. Every year he sells clear timber to special customers at premium prices.

"Judge for yourself," says Mr. Pratt, "whether it pays to prune white pine. The last pine which I cut was a lot of 140,000 board feet. Out of this I picked out the first 20,000 which I sold for \$65 a thousand, although everybody knows that the average price now for white pine is about \$20. In other words, for the few hours of work which I put in pruning these trees years ago, I was paid at the rate of more than \$40 an hour. One man can prune at the rate of 100 linear feet in an hour, and when the crop is harvested it is worth \$50 a thousand more."

Mr. Pratt has built himself a beautiful home far up on a hill overlooking the valley which he owns and where he saws his lumber and conducts various experiments. The best lumber is shipped away, but the poor is used in making barrels and boxes which he needs for shipping apples.

It should be added that Mr. Pratt grows apples as well as pine. He sells the apples each year from an orchard of 3500 trees and finds that it pays, but as a forester he is best known. Whoever visits him in Holderness understands why people come from Europe to learn from him.

(From Monitor - Patriot, Concord N. H.)

R. S. Hunt
New Hampshire Publicity Bureau.

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HARVARD SAVES A BLOCK OF OLD WHITE PINE

Twenty acres of old-growth white pine and hemlock on Mount Pisgah, in the town of Richmond, N. H., has been purchased by subscription for Harvard University and will be kept in its natural state. The bit of primeval forest of which this tract is a part is almost the last remaining in New England. Dr. John C. Phillips, of Boston, took the initiative in collecting the money necessary for the purchase, about \$1,000 an acre, and was assisted by Prof. Richard Fisher, of Harvard. The tract will be used for research by the students not only from the Harvard Forest at Petersham, Mass., but also from the Yale Demonstration and Research Forest at Keene, N. H. It will continue to be accessible by trail only.

Forest Worker. May, 1927.

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"The real test of ability in scientific, administrative, and regulatory work among individuals and in organizations is not so much in conceiving and undertaking the work as in preserving the initial enthusiasm until the job is finished."--Dr. John R. Mohler, Chief of the Bureau of Animal Industry, in a recent address.

LUMBER MAGAZINE WRITES OF INTERESTING WINDOW DISPLAY AT HERKIMER, N. Y.

The Lumber Cooperator, published by the Northeastern Retail Lumbermen's Association has an interesting article in their May 1927 issue on the forestry display in the windows of C. R. Snell & Sons Company retail lumber dealers of Herkimer, N. Y.

"George Stevens of the Conservation Department, Albany, New York, assumed full charge of all details in arranging the display, which was laid out in truly artistic style and attracted a great deal of interest and comment."

"One phase of the exhibit that could well be impressed on the minds of every citizen were ten sections of log piled in pyramid formation with

a large placard on the top bearing the words, 'Ten Commandments for White Pine Owner.' To each of the ten sections of tree was tacked a card worded with one of the ten commandments, as follows:

Reforest all idle land.

Cut no promising trees measuring under ten inches on the stump.

Cut low stumps (12 inches or more); save the best timber.

Take care not to injure the young timber.

Leave four bushy-topped seed producing trees on each acre.

Keep out fire at all times.

Pull the tops of all cut trees away from the living timber; save it from the fungi and worms.

Eradicate all currants and gooseberries within 900 feet of white pine.

Get familiar with white pine blister rust.

Consult the blister rust control agent in your district."

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Note: C. R. Snell & Sons Company in writing Mr. W. G. Howard of the New York Conservation Commission, thanking them for their cooperation in making the reforestation display such a big success says:

"In our opinion, these window displays will produce more immediate results than anything else in the publicity line. Today the public is interested in what they see, more than what they read, and we believe the Department should continue this feature."

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PRESERVED BLISTER RUST SPECIMENS AVAILABLE

The Washington Office has available for distribution over 150 test tubes filled with blister rust specimens in aecial stage preserved in glycerine-formalin solution. These are available not only to our Agents but to other agencies that could use them to advantage.

The specimens were collected this spring by the Connecticut Agents under the direction of State Leader Riley. In this connection I wish to quote from a letter recently received from an instructor in Botany at a midwestern university. "I wish to acknowledge the receipt of the 6 test tubes of aecial material of white pine blister rust. It is beautiful material and I expect to wrap each tube in tissue and show it to students as one might exhibit a rare painting."

Roy G. Pierce.

FEDERAL LAND BANK OF SPRINGFIELD, MASS., PUTS OUT INTERESTING
LEAFLET ON IMPROVEMENT OF THE WOODLOT

Through the courtesy of Mr. E. D. Strait, Chief Appraiser of the Federal Land Bank of Springfield, Massachusetts, each of the eastern agents has been sent a copy of this leaflet. This contains a number of valuable suggestions which are pertinent to the improvement of the white pine woodlot, as well as woodlots of other trees in the northeastern states. It is significant to note that this bank appreciates so much the value of the farmers' woodlots, which are used as security for loans, that it is doing its utmost to improve them.

Besides the leaflet above mentioned, the Federal Land Bank offers to the woodlot owners of the northeastern states a Cruising Stick which "enables one to measure the actual volume in cords or board feet of any standing timber growing in the eastern states", and a Scale Stick which "enables one to find the contents in board feet of 8, 10, 12, 14, and 16 feet logs up to 36 inches in diameter".

This office has a limited number of copies of the leaflet on "Improvement of the Woodlot" available for distribution to the agents.

Roy G. Pierce.

Q U A R A N T I N E S

SUMMARY OF VIOLATIONS OF FEDERAL QUARANTINES REPORTED TO THE
OFFICE OF BLISTER RUST CONTROL SINCE JANUARY 1, 1927.

The following is a summary of violations of Federal quarantines reported to this office since January 1, 1927.

QUARANTINE No. 63.

	<u>Class A</u>	<u>Class B</u>	<u>Total</u>
Nurseries	15	108	123
Individuals	97	1	98
State organizations . .	1	1	2
Recreation association	1	--	1
Total	<u>114</u>	<u>110</u>	<u>224</u>

Class A - Shipments which are actually prohibited, as quarantine on pines; shipments of Ribes from infected States by persons or concerns who had not obtained a permit; shipments of Ribes by permittees who failed to

dip the plants; shipments from infected States of Ribes other than cultivated red and white currants and cultivated gooseberries; shipments from non-infected States without having the State inspection certificate attached.

Class B - Shipments of restricted plants without declaration of contents; shipments by permittees who failed to attach the FHB permit tag; shipments by permittees of non-dormant Ribes; shipments by permittees who used an expired State inspection certificate.

Violations under Quarantine No.	38	.	.	.	.	.	2
"	"	"	"	"	"	"	45
"	"	"	"	"	"	"	48
"	"	"	"	"	"	"	53
							<u>21</u>
							60

The above figures include violations reported by our Spokane office as well as a few by State nursery inspectors of the States of destination.

M. A. Thompson.

DISTRICT QUARANTINE AGAINST CURRANTS AND GOOSEBERRIES

OFFICIAL NOTICE OF QUARANTINE

STATE OF NEW YORK - CONSERVATION COMMISSION

Albany, August 17, 1917.

As Amended February 15, 1927 to read as follows:

TO WHOM IT MAY CONCERN:

Whereas: a dangerously injurious disease known as the White Pine Blister Rust, caused by a fungous parasite known technically as *Cronartium ribicola* Fischer (*Peridermium strobili* Klebahn) is present in this State, and whereas attempts to control the spread of this disease by the removal of currants and gooseberries have been made in several localities:

Now, therefore, I Alexander Macdonald, as Conservation Commissioner of the State of New York, by virtue of the power conferred and duties imposed upon me as such by the provisions of the Conservation Law, hereby forbid the bringing into the districts herein described or the planting, possession or propagation within these districts of any species of currants and gooseberries within these districts of any species of currants and gooseberries, including flowering currants (*Ribes aureum* and *R. odoratum*).

This order shall apply to the following localities:

All of Clinton, Essex, Warren, Washington,
Saratoga, Fulton, Herkimer and Lewis
Counties.

Columbia County.

Towns of Trenton, Remsen, Forestport,
Boonville and Steuben.

St. Lawrence County.

Town of Clare, Clifton, Colton, Fine,
Hopkinton, Parishville, Piercefield,
and Pitcairn.

Franklin County

Towns of Altamont, Belmont, Brighton,
Duane, Franklin, Harrietstown,
Santa Clara and Waverly.

Niagara County

Towns of Porter, Lewiston and Niagara.

All of the Adirondack Park and Catskill Park, as
defined in Chapter 451, Laws of 1916.

This order shall take effect on the date hereof and remain in full
force and effect until further order.

(signed) Alexander Macdonald
Conservation Commissioner

The violation of this order is a misdemeanor.

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NEBRASKA ENACTS NEW PEST CONTROL LAW

The recently enacted Nebraska laws, (April 1927), pertaining to
pest control contain some excellent points which may be of interest to
blister rust workers:

All plants which are nonessential to the welfare of the people of
the State, and which may be host plants of pests destructively injurious
to other plants essential to their welfare, are declared a public
nuisance. And all plants infested or infected by dangerously injurious
pests liable to spread to the injury of other plants or to men and ani-
mals, are declared a public nuisance.

The State Department of Agriculture authorizes its representatives
to stop pedestrians, motor cars and other vehicles likely to be carrying
plants or other things which may be infested or diseased, or which may
be moving contrary to the regulations. Its representatives may also
enter upon any place where it may be necessary or desirable for them to go.

The State Department of Agriculture may prohibit or regulate the bringing into the State of any plant or other thing likely to convey any insect pest or plant disease, unless, the Secretary of the U. S. Department of Agriculture shall have established a quarantine with reference to the insect or disease in such a manner as to completely protect the interests of the State of Nebraska. Anything brought into the State in violation of a State or Federal quarantine is subject to destruction or return to the consignor at the expense of the owner. The act is not construed as to conflict in any way with any act of Congress regulating the movement of plants or plant products in inter state or foreign commerce.

The misuse of a certificate of inspection is sufficient ground for its revocation. Shipments of nursery stock must be labeled as to general nature of contents.

M. A. Thompson.

P E R S O N A L S

Mr. S. B. Detwiler returned to the Washington Office on May 21 after a two months' field trip through the western states.

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Mr. R. A. Sheals made a flying visit to the Washington Office during the first week in June to report on the quarantine inspection work of the spring.

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Mr. A. E. Fivaz, who has been assisting Mr. J. E. Riley, Jr., on the Canaan Connecticut Experimental Control Area for the past month, returned to Washington June 4 for a short stay.

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Mr. Francis C. Schofield was a recent visitor to the Washington Office. He has been studying at Lehigh University.

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Messrs. C. J. Brygger, Department photographer and Roy G. Pierce of the Washington Office spent two and half weeks in Maine and New Hampshire taking photographs of blister rust, white pine and Ribes, returning to Washington May 26, with 250 negatives.

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Miss Elizabeth Gorman was appointed Junior Clerk Stenographer in the Office of Blister Rust Control on May 27.

Mr. Byron W. Carr, who has been assisting Mr. Hodgkins in quarantine inspection work at Kansas City, Mo., resigned April 30.

Mr. Lee Thurston Corbett, who was engaged in blister rust control work during the past four summers, visited the Washington office recently upon the completion of his second year in the Law College at Cornell University. This summer he will enter a law office in New York City.

Dr. Lee H. Pennington was appointed agent June 1 for a period of four months. He will continue his study of the epidemiology of the Rust, which he began last year.

Appointments

A number of agents have been recently appointed with headquarters in the western states as follows: Mr. Carl Epling at Sacramento, California, Mr. Robert L. MacLeod at Corvallis, Oregon, and Messrs. Bernard A. Anderson, A. P. Balch, Henry C. Hoffman, Raymond A. Kienholz, Rene La Rocque, Walter H. Lind, Nels Lindh, and Galen W. Pike at Spokane, Washington.

P U B L I C A T I O N S

Blister Rust

Anon. Blister Rust Quarantine Revised.
The Florists Exchange. Feb. 26, 1927. p.767.

Colley, Reginald H. and Minnie W. Taylor. Peridermium kurilense Diet. on Pinus pumila Pall., and Peridermium indicum N. sp. on Pinus excelsa Wall. *Journal Agricultural Research. Vol. 34, No. 4, p. 327-330 Feb. 15, 1927.

Two new blister rusts have been found on five needled pines, attacking the stems, and are described in above article. Peridermium kurilense attacks the Dwarf stone pine (*P. pumila*) while Peridermium indicum is found on the Himalayan/Bhutan pine (*Pinus excelsa*).

According to L. H. Bailey in Cultivated Evergreens, the dwarf stone pine, a native of northeastern Siberia and the high mountains of Korea and Japan, was introduced to Europe before 1817, and to the Arnold Arboretum near Boston, Massachusetts, in 1915 by E. H. Wilson. Bailey states that

it does not seem to do well under cultivation. The Himalayan white pine noted for its graceful drooping foliage, the needles being 6 to 8 inches long is, according to Bailey, hardy in sheltered positions as far north as Massachusetts, but it occasionally suffers in a very severe winter. It is "a handsome tree of rather loose habit with wide spreading branches and graceful pendulous foliage." Some beautiful specimens are found on the White House grounds at Washington.

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SUPPLEMENT TO

THE BLISTER RUST NEWS

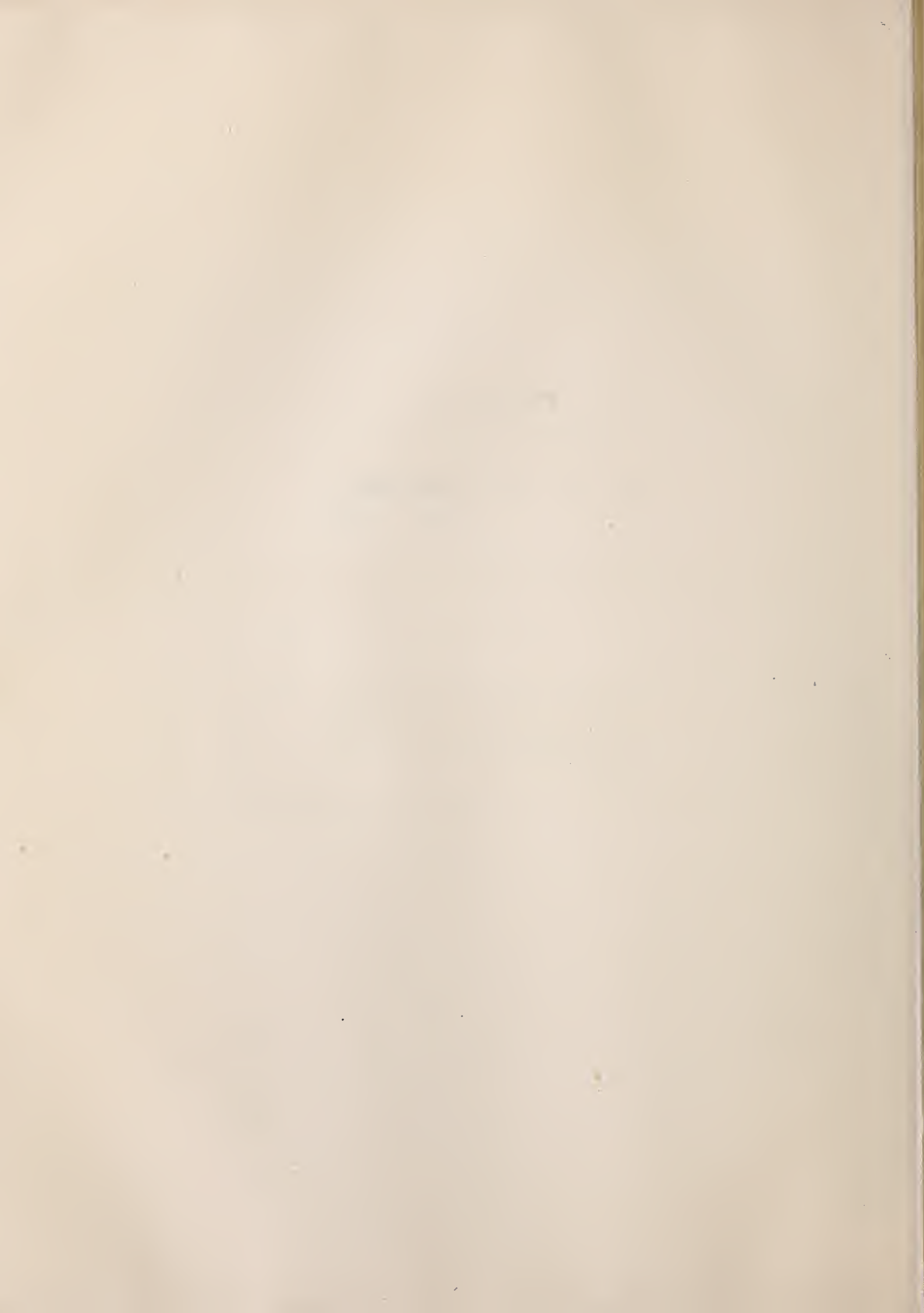
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A DISTINGUISHING CHARACTER OF THE WILD BLACK CURRANT (RIBES AMERICANUM MILL.) WITH NOTES ON R. NIGRUM AND OTHER RIBES SPECIES

By Roy G. Pierce

There is such a similarity in the appearance of the leaves of the eastern wild black currant (Ribes americanum) and the cultivated European black currant (Ribes nigrum) that the finding of a fairly positive means of distinguishing between the two species is of great value. The desirability of finding an easy means of identification of the two species has been brought out many times in the practical field work of controlling the white pine blister rust.

Throughout the eastern half of this country, the eastern wild black currant, (Ribes americanum Mill.) (synonym - R. floridum L'Her.) is frequently cultivated. In February, 1925, four new cultivated varieties of R. americanum were offered for sale in South Dakota, under the names of Tonah, Atta, Moto, and Wanka currants. When found in gardens it may be easily mistaken for the European black currant. The latter, however, is being gradually eliminated in this country, on account of its great susceptibility to the white pine blister rust (Cronartium ribicola - Fischer). In control areas where currants and gooseberries are being destroyed for the protection of the white pine no currants and gooseberries should be grown. While both the above species are susceptible to this disease and may act as carriers or intermediary hosts through which the rust spreads to pines, yet Ribes nigrum is by far the worse pest because of its very vigorous growth, abundant leaf production and extreme susceptibility to this rust. A very good graphic representation of the relative amount of blister rust infection found on R. americanum and R. nigrum is given by Minnie W. Taylor (1). The accompanying illustrations of the infection on the leaves of the two species, taken from her paper will be of interest.



RIBES AMERICANUM



RIBES NIGRUM

Diagrammatic drawing to show average size, shape and relative amount of blister rust infection of leaves of Eastern wild black currant (Ribes americanum) and European black currant (Ribes nigrum).

While the characteristic ridged stems of Ribes americanum should readily distinguish this plant from the round-stemmed Ribes nigrum, yet it is sometimes very desirable to identify the currant from an examination of the leaves only.

The position of the resin-dotted glands, which are so characteristic of both species, does afford a fairly positive means of distinguishing between these two species and is valuable even where leaves alone are concerned.

It is generally known that sessile resin-dot glands, or resin dots as they are called, occur on the lower surface of the leaves of these two species. Early in October 1924, a casual ocular observation of fresh material of Ribes americanum from St. Johnsbury, Vermont, made by Miss Alma Bishop of the Office of Blister Rust Control, revealed abundant reddish-brown resin dots on the upper side, as well as on the lower side of the leaves.

R I B E S A M E R I C A N U M

The early botanists recorded these resin dots on both sides of the leaves of R. americanum, but in general, later botanists apparently have not mentioned those on the upper leaf surfaces, in their writings.

2

The French botanist, L'Heritier who described the wild black currant of Eastern America, in 1784 as Ribes floridum, noted that the leaves had glands on both sides. In 1814 Pursh, made the same observation. In 1838-40 Torrey and Gray described the species as having "leaves sprinkled on both sides with resinous dots." Mrs. A. H. Lincoln⁵ in 1852 describes the leaves of R. floridum L'Her., as "punctate on both sides"; while in the sixth edition of Gray's Manual⁶ in 1889, R. floridum is noted as having "leaves sprinkled with resinous dots."

7

Later botanists, however, such as Britton in 1905, Coulter and Nelson⁸ 1909, Britton and Brown⁹ 1913, Rydberg¹⁰ 1917, Rehder,¹¹ 1919, all described this species as having leaves glandular dotted, or resin dotted beneath. Coville and Britton¹² in North American Flora, in their description of the species note that the leaves are "glandular dotted, beneath" but in their key to species (page 195) list R. americanum with R. nelsoni, under the group, Americana - with the characterization "Leaves with scattered, sessile, amber-colored, wax-like, non-exudating glands on both surfaces". None of the above-cited descriptions are incorrect but where mention of the resin dots on the upper leaf surface was omitted an important diagnostic character was missed.

A study of the leaves of Ribes americanum in the herbarium of the Office of Blister Rust Control was made by Miss Nina Schnell, formerly of that Office; Seven hundred and thirty leaves on 53 specimens have been examined from the following sources:

SOURCE	NO. OF LEAVES	SOURCE	NO. OF LEAVES
District of Columbia	7	Nebraska	52
Michigan	20	North Dakota	48
Minnesota	211	South Dakota	43
Montana	174	Wisconsin	<u>175</u>
		Total	730 leaves

In all cases there were resinous dots on the upper-sides of the leaves. In a few cases, these resin dots were very scarce, being less than 10 for the entire upper surface of the leaf. A hand lens with a magnification of 10 diameters was used in the examination of the *Ribes* leaves in this study.

The above study was supplemented by an examination, by the writer, of some of the specimens or collections in the U. S. National Herbarium at Washington, D. C. One or more leaves were taken into consideration on each of 54 specimens. Their distribution according to state or province is indicated in the following:

SOURCE	NO. OF SPECIMENS	SOURCE	NO. OF SPECIMENS
Illinois	6	North Dakota	4
Iowa	2	North Carolina	1
Massachusetts	1	Ohio	2
Maine	2	Pennsylvania	1
Michigan	2	Rhode Island	2
Minnesota	2	South Dakota	1
Montana	7	Wisconsin	2
New York	7	Wyoming	2
New Mexico	2	Alberta	3
Nebraska	3	Assiniboia	1
		Quebec	<u>1</u>

Total specimens examined - -- 54

Resin dots were found on the upper side of every *R. americanum* leaf examined, as well as on the lower leaf surfaces.

The above observations on the leaves of *R. americanum* collected from so many sources prove conclusively that the presence of resin dots on both sides of the leaves is characteristic of this species.

R I B E S N I G R U M

Coville and Britton¹² (page 197) state that leaves of R. nigrum are "3-5 lobed thin, sparingly pubescent and resinous dotted - -," not stating whether they occurred on the upper or lower leaf surfaces, or both.

Statements from the eminent English botanists, Sir J. D. Hooker and George Bentham, on the other hand, show that to them, the resin dots on the lower leaf surface only of Ribes nigrum were characteristic of the species; Hooker¹³ described the species as "Ribes nigrum L. leaves angled 5-7 lobed glandular dotted beneath, lobes triangular acute, serrate - - -"; and Bentham, ¹⁴ wrote "Black Ribes. Ribes nigrum Linn. Easily known by the peculiar smell of the leaves when rubbed, arising from the small glandular dots copiously sprinkled on the under side - -".

A study of the leaves of Ribes nigrum L. has also been made by the writer from specimens in the Offices of Pathological Collections, Forest Pathology, Blister Rust Control, and Economic and Systematic Botany of the Bureau of Plant Industry at Washington, D. C., and from specimens in the U.S. National Herbarium. Six hundred and sixty-three leaves of R. nigrum from one hundred collections of leaves in folders and envelopes were examined from seven countries in Europe, from four provinces in Canada and from eleven states and territories in the United States. The source and number of leaves examined follows:

SOURCE	NO. OF LEAVES	SOURCE	NO. OF LEAVES
Bohemia	6	District of Columbia	73
Denmark	2	Massachusetts	202
England	5	Minnesota	3
France	3	New Hampshire	68
Germany	36	New Jersey	5
Poland	2	New York	69
Sweden	11	Pennsylvania	7
British Columbia	3	Rhode Island	99
Ontario	6	Vermont	10
Prince Edw. Island	2	Washington	25
Quebec	3	Wisconsin	23
		Total - -	663 leaves

All of the above examined leaves of R. nigrum had resin dots on the under surfaces, while in only five out of the hundred collections were there leaves which had resin dots on the upper surface. Two of these collections were from England, one was from Sweden, and two others were from Massachusetts.

The English collections are in the herbarium of the Office of Forest Pathology, under their collection numbers 37141 and 37150. Both collections were made by W. Stuart Moir at Woodstock, England, on October 14, 1920. One of the two leaves of the first collection, and one of three leaves in the second collection had resin dots on the upper leaf surface.

The Swedish collection of R. nigrum is in the herbarium of the Office of Pathological Collections, and was collected by Hj. Moller, August 16, 1894 in S. Asum, Skane, Sweden and is found under the label "fungi Scandinovici, Cronartium ribicola. Dietr. II, III, Ribes nigr." This collection consists of six leaves, one of which had resin dots on the upper leaf surface. This leaf was 33 mm. in width and had over 100 resin dots on the upper surface.

The Massachusetts collections are in the herbarium of the Office of Economic and Systematic Botany, in two folders. The leaves in both collections, though labeled Ribes nigrum, are all relatively small, none being over 50 mm. in width, and are finely serrate, unlike R. nigrum in this character and in the general shape of the leaves. The first collection was made at the Arnold Arboretum in Boston on April 28, and May 8, 1910 by W. F. Wight under No. 4304. Seven of the eleven leaves examined in this collection were found with resin dots on the upper leaf surface. The second collection was also made at the Arnold Arboretum, at Boston, Massachusetts on April 29, 1913, by W. H. Moore. Two of the five leaves examined had resin dots on the upper surface.

It is thus seen that 12 leaves only of Ribes nigrum in 5 collections, out of a total of 663 leaves examined from over 100 separate collections, were found with resin dots on the upper leaf surface. Generally speaking, the resin dots if present on R. nigrum on the upper leaf surface are few while upon R. americanum they are many. On R. nigrum the resin dots are generally yellow in color while on R. americanum they varied from reddish brown to a pale yellow.

Summing up the evidence it may be stated that it is characteristic of R. americanum to have resin dots on both sides of the leaves, while for R. nigrum their appearance on the upper leaf surface is rare.

O T H E R S P E C I E S

There are at least five other species of Ribes having resin glands or dots on the upper surfaces of the leaves, but on account of the distribution of these species, they will not be confused readily with R. americanum. These species include:

1. R. nelsoni, Coville & Rose, whose known distribution is limited to Colonia Garcia, Chihuahua, Mexico.
2. R. viburnifolium, A. Gray, an evergreen shrub, whose known distribution includes lower and southern California and adjacent islands.

3. R. bracteosum Dougl., distributed along the Pacific Coast from eastern Alaska to northern California. This species has large leaves, 3 inches or more across, and 5-7 lobed.

4. R. petiolare Dougl. whose range extends from the interior of British Columbia to Montana, and southward to Wyoming, Utah and Eastern Oregon. The leaves of this species are cordate at base with basal sinus usually deep. This differs from R. americanum in that the latter has leaves with widely open sinus at base. Of 44 R. petiolare leaves examined, only 4 had resin dots on upper surface of leaf.

5. R. nevadense, Kellogg is distributed through the mountains of California, southern Oregon, and western Nevada.

Ribes americanum according to Coville and Britton,¹¹ ranges from Nova Scotia to Virginia, Nebraska, Wyoming, Montana, Alberta and Assiniboia, also in New Mexico; its leaves are 3-5 lobed and usually less than 3 inches across.

In general, therefore, it may be stated that when black currants, with resinous dots upon the upper leaf surface are found in cultivation, or in a wild state, in the Rocky Mountains and eastward, the species is Ribes americanum, Mill.

- ¹Taylor, M. W. - Potential Sporidia Production Per Unit in Cronartium ribicola. Phytopathology Vol. 12, p. 298-300, Fig. 1. 1922.
- ²L'Heritier de Brutelle, C. L. Stirpes novae - - - Fasc. 1, p. 4, 1784
- ³Pursh, F. T. Flora Americae Septentrionalis. Vol. 1, p. 164, 1814.
- ⁴Torrey, John, and Asa Gray. A Flora of North America. Vol. 1, p. 549. 1838-40.
- ⁵Lincoln, Mrs. Almira H. Familiar Lectures on Botany - - Part 6, p. 155. 1852.
- ⁶Gray, Asa, Sereeno Watson, and J. M. Coulter, 6th Edition P. 176. 1889
- ⁷Britton, N. L. Manual of the Flora of the Northern States and Canada. 2nd Edition p. 488. 1905.
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- ¹⁰Rydberg, P. H. Flora of the Rocky Mountains and Adjacent Plains, p. 398. 1917.
- ¹¹Rehder, Alfred. Ribes; in L. H. Bailey's Standard Cyclopedia of Horticulture Vol. 5, p. 2959. 1919.
- ¹²Coville, F. V. and N. L. Britton, Family 13 - Grossulariaceae; in North American Flora, Vol. 22, Part 3, p. 195, 206. 1908.
- ¹³Hooker, Sir J. D. The Students Flora of the British Islands, London. ed. 2 Page 141. 1878.
- ¹⁴Bentham, George. Handbook of the British Flora - - London. Vol. 1, p. 302. 1865.

BLISTER RUST NEWS



July 1927.

Volume XI

Number 7

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 11. No. 7.

July, 1927.

CALIFORNIA STRIKES AT MENACING BLISTER RUST

Disease is 200 Miles Away From Her Borders, But State Wants
To Take No Chances With It.

In the war on the blister-rust disease which menaces the immensely valuable white-pine timber of the country, the State of California has adopted a law which brands as a public nuisance the cultivated (European) black currant, the intermediate host of the causative fungus of the disease. The act was passed by the California Legislature during its last biennial session and was approved by Governor Young on April 4. The department believes that other of the States will be interested in California's action.

* * * * *

The California law goes into effect next July [1927]. It aims to accomplish the removal of the currant plants in cases where educational means have failed, and to prevent replanting, which has been done in some instances. The section added to the political code of the State reads as follows:

"The cultivated black currant (Ribes nigrum) is hereby declared to be a public nuisance; and the director of the State department of agriculture and the county commissioners of horticulture of every county are hereby invested with the power to abate the nuisance in a summary manner. Every person, firm, or corporation who or which grows, propagates, or distributes cultivated black currants (Ribes nigrum) in the State of California is guilty of a misdemeanor."

Since the European black currant is more than 200 miles distant from the northern borders of California, the State realizes the menace to its valuable sugar-pine stands.

Idaho and Oregon, whose white-pine forests are in greater jeopardy at present from the rust than the sugar-pine forests of California, already have laws declaring European black currants a public nuisance, and eradication of these plants is practically completed in these two States and also in Washington and Montana. It is expected that this work will be completed in California by the end of 1928. In California credit is due the State department of agriculture, the State board of forestry, and the lumber interests comprised in the California Forest Protective Association for the initiation and indorsement of the black-current legislation.

* * * * *

The Official Record, June 8, 1927.

NOTES ON THE SERIOUSLY INFECTED BLISTER RUST AREAS AT SHELBURNE,
ROWE, AND CONWAY, FRANKLIN COUNTY, MASSACHUSETTS.

Shelburne and Rowe

A year or so ago an old and heavy infection area was located in the town of Shelburne, Mass. At that time it was considered the oldest infection in the district. It was checked by Dr. Pennington late in the summer of 1926. Infections dating back to 1908 - 1909 were found. After his visit another area was located in Rowe. Because of the pressure of eradication work during 1926, little attention was paid to infection areas.

During May, 1927, a careful inspection of the infection area in Rowe was made and reported cankers dating back to 1904 and 1905 were found in the area. The majority of the infected pine covers an area of about two acres. There are very few small trees on this area and even a less number of young cankers. A large number of the old cankers are 15 to 30 feet from the ground. The largest infected tree is about 15 inches D.B.H., but only a branch infection could be seen upon it. The owner of this stand requested that all infected trees be marked last fall so that he could cut the logs during the winter.

The cause of the infection is due, without a doubt, to cultivated black currants which grew within a distance of 600 feet. Cankers of 1908 and 1909 have been located within a radius of 2 miles of this plot. The old infection area in Shelburne is 10 1/2 miles (air line) from the still older infection in Rowe.

G. S. Doore, Mass.

Rowe and Conway.

The infection area in the town of Rowe, in the old pine, has been examined and I find that blister rust runs very heavy, and many of the large trees have stem cankers. Mr. Doore and I laid off an acre, dividing it into quarter acre plots, then examined all the pines except those that have come in since the *Ribes nigrum* were taken out. The percentage of infection in the plots ran as follows: Plot 1 - 63.63%, Plot 2-60%, Plot 3-63%, Plot 4-68.75%. The average percent of infection for all plots is 66.

We are now (June 23) working in the town of Conway, and have examined all the pines in a quarter acre plot; of 196 trees examined we find that 63.26% of them are infected with Blister Rust. The disease in this case is traced to wild gooseberry bushes, *Ribes cynosbati*. We have laid off another plot adjoining the first and have examined about half of the trees. Infection runs about 55%.

L. W. Hodgkins. - Mass.

NEW CREW FORMATION BEING TRIED IN CONNECTICUT

During the month of June observations are being made on the desirability of a checker working with the foreman back of the line. Several companion plots have been laid out. On each pair of plots one will be worked with a five-man crew and a foreman, while the other plot will be worked with a four-man crew and foreman and checker. The foreman is to direct the crew and do what checking he can. The checker will be available to take out Ribes concentrations thus relieving the crew men and preventing waste time due to this cause. He will check at other times. The working time is kept on all plots and all plots are checked. It is expected that the data will indicate the relative advantage of the two formations.

J. E. Riley, Jr. Conn.

SOME BLISTER RUST OBSERVATIONS

Very cool summer to date, with occasional rains. Favorable for blister rust spread so far. Plenty of Ribes infection, defoliation by blister rust already prominent in places. First uredinia Canaan, Conn., May 18, 1927, on vulgare, escaped; next day on cynosbati, first of thousands of leaves examined, good record for region. First telia Warrensburg, N. Y., on rotundifolia, June 27, many bushes are badly infected and defoliating already. The uredo spots seem to be a more brilliant orange this season than I have ever seen before.

A. E. Fivaz, N. Y.

WHEN IS A RIBES BUSH DESTROYED?

An interesting case of the persistence of currant bushes and of their owners has come to light from Mr. Hurford, State Leader of Rhode Island.

Last year Mr. O. C. Anderson, the Blister Rust Control Agent, burned down certain property and the state paid six dollars for the said Ribes, compensation being demanded. As soon as Mr. Anderson's men disappeared the owner found the bushes and replanted them.

Explanations, attempted cooperation, and information as to the law were of no avail. The matter now rests with the state authorities. This all goes to show that regulatory laws are necessary and occasionally instances arise where enforcement is the only method of securing observance.

INFORMATION OF SPECIAL INTEREST TO PINE OWNERS IN BERKSHIRE COUNTY, MASS.

Blister rust kills white pine trees.

Blister rust can not spread from pine to pine. It is transmitted to pine only after developing on the leaves of currant and gooseberry bushes.

Prevention of the further spread of the disease can be accomplished by getting rid of currant and gooseberry bushes in the pine growing sections.

Blister Rust is present in 21 towns in Berkshire County as follows:

Alford	Gt. Barrington	Mt. Washington	Richmond	Tyringham
Becket	Lanesboro	New Marlboro	Sandisfield	W. Stockbridge
Clarksburg	Lee	Otis	Sheffield	Williamstown
Egremont	Lenox	Pittsfield	Stockbridge	
Florida	Monterey			

Examinations in some of these towns have revealed woodlots where as high as 91% of the pines are diseased and 50% have already been killed by the rust.

Nearly 84,000 acres were examined for currant and gooseberry bushes in six towns in this county in 1925 and 1926.

Every pine lot examined yielded currant and gooseberry bushes.

Your lot is an exception if there are none of these bushes present.

Wherever currant and gooseberry bushes are found, it is unusual not to find nearby pine infected.

The work of eradicating currant and gooseberry bushes has now been started in 12 towns in Berkshire County.

Participation in this work by every pine owner in the community is the only assurance that all the pines will be protected.

The State will aid you in locating and eradicating the bushes on your property.

Examination of the pine land in your vicinity is now being made and your cooperation is desired in order that the entire area may be made safe for growing white pine.

The cost of protecting pine in the Berkshires in 1925 and 1926 averaged about 10¢ per acre depending on the number of bushes destroyed.

You may obtain further information and assistance without obligation to yourself by applying to the undersigned representative in your county.

Telephone - Gt. Barrington 667-M

W. J. Endersbee, Agent,
Blister Rust Control.

Note:-The preceding circular letter has been used to advantage by Agent W. J. Endersbee, in Berkshire County, Massachusetts. The letter has been enclosed with a copy of Miscellaneous Circular 40, "White Pine is Profitable if Protected From Blister Rust", and a copy of Massachusetts Department Publication No. 132, "Destroy Black Currants".

R.G.P.

BLISTER RUST CONTROL AT RUTLAND (VT.) CITY FOREST

In the National Geographic Magazine for March, 1927, Mr. Herbert Corey writes of the Green Mountain State. One of the photographs accompanying the article shows a plantation of white pine with a big signboard, the legend reading, "Rutland City Forest 1500 acres. White Pine Planted in 1916." Below the photograph of the white pine is the following statement:

"A Municipal Forest That is Proving its Worth. Ten years ago the city of Rutland planted several hundred acres of waste mountain land in pine. Now it is valuable timber and protects the watershed of Mendon Brook, the source of the city's water supply. The Rutland planting is the largest and most valuable of the many municipal forests throughout the State."

Mr. W. E. Bradder, Vermont Agent, in a letter of July 11 writes about the control of blister rust on this municipal forest:

"The work was first done in 1920 under Mr. J. E. Riley's direction. Mr. Robert Wood was foreman of the crew. At this time a great many skunk currants, Ribes glandulosum, were eradicated from the area. It was gone over again by employees of the city under my direction in May, 1926, when 230 R. glandulosum were removed. The location is about 1500 feet elevation and is in typical skunk currant type of country. No native pine in this section, but plantations have made splendid growth. Incidentally damage by the pine weevil, so prevalent in the valley, is practically absent here. The city has bought 1500 additional acres on this same watershed during the past year and will reforest all of the open land. In scouting the property in 1926 I found infection very scarce."

During the month of May, the City of Dover, N. Hampshire, appropriated \$500 for blister rust control.

TOWN COOPERATIVE ERADICATION UNDERWAY IN NEW HAMPSHIRE

On April 25th the first town project of the season in the control of the white pine blister rust was commenced. Since that date additional crews have been put in the field, until as we go to press there are now seventeen towns being worked and about 110 men being employed. In cooperation with individual pine owner projects are being carried on in six additional towns. Control measures for this season have already been completed in twelve communities. As the present period is practically the beginning of another season of blister rust activities, it seems quite proper to call to the attention of the public, particularly to residents in towns, who last March voted for control work, some of the policies which govern this work.

Selection of white pine areas to be worked is not made in a hit-or-miss fashion. On the contrary, a blister rust control agent consults with members of the Board of Selectmen so as to secure their opinions regarding the proper sections of the town where the eradication of currant and gooseberry bushes is essential, and to ultimately approve the general plan which will govern the activities of this particular year. Often it is impossible to commence the eradication of currant and gooseberry bushes in one section of a town owing to the fact that a boarding place for the crew cannot be obtained within a reasonable walking distance of the territory to be worked. It is the desire of the forestry department to eliminate, wherever possible, daily charges for transportation of the blister rust crew. It is desirable that the entire amount of the funds available, be employed in the actual destruction of currant and gooseberry bushes.

Blister rust control work would be much better understood and its value appreciated if more people would make a practice of responding to the request of the blister rust agent by coming out and viewing the work of the crew. Upon the commencement of control work in such towns it is the practice to post in public places, signs announcing that the work is underway and suggesting that the towns people make it a point sometime during the next few weeks to see for themselves the means employed in this work. Unfortunately we have to state herewith that but few persons ever go to the trouble of trying to inform themselves first hand regarding the work that they have voted for at the town meeting. On the other hand, many of these same persons who refuse to acquaint themselves with blister rust control work are the very first, six months or a year afterwards, to spread rumors regarding alleged inferior work. In the interest of fair play, before you make criticisms of any public work, whether it be of white pine blister rust control, or the state highway crews, gipsy and browntail moth workers or other similar groups it is only right to first learn who these men are and afterwards the reason for the particular thing that they may be doing.

Persons who are interested in going out in the woods to view the blister rust crew, should make it a point to get in touch with the crew foreman the day before; this will enable you to locate the crew with the least possible waste of your time. Now that the matter has been called to your attention, why not call the crew foreman up today?

ELEVEN YEAR OLD BOY PULLS GOOSEBERRY BUSH SAME AGE AS HIMSELF

One of the local Cornwall boys has become interested in saving the pines from blister rust and has started a war of his own on wild gooseberry bushes. One forenoon he found and pulled thirty-three gooseberry bushes and one wild currant bush. One bush was found to be eleven years old and to have fifteen live stems from one root crown. The largest stem was not over four feet tall and at the base not larger than a lead pencil. Including the small bushes there was in all 119 feet of live stem in this bush. One of the longest roots was nearly five feet in length. Nearly all the leaves showed the brown stage of the blister rust infection which seems to be developing early this year. No count was made of the number of prickles on the bush, but the young man thinks that none were missing.

Peter Pine Planter (E.D. Clark)
Litchfield, Conn. July 19, 1927.

Edit: The work of the 11 year old boy, described above, is probably due to the publicity methods adopted by our friend Peter Pine Planter. The more boys we can get to thinking and working for themselves along the lines of forest protection, the more secure will our future forests be.

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RIBES ERADICATION WELL UNDERWAY IN CONNECTICUT

Crew work in cooperation with individuals started in Litchfield County May 10. One foreman worked with labor supplied by the pine owner until June 9 when the second foreman started work with labor also furnished by the pine owners.

State eradication work started in Canaan and Salisbury June 1. This is a single-crew camp. A second state camp started in Norfolk June 13, with a scout, foreman and one man. This crew is being increased to six men, foreman and scout, and the quota will be completed June 27.

Elimination scouting started May 9 in Eastford, the work being done by Agent Miles. The object of this work is to eliminate more pine areas within a general pine section.

A state scout has been working in the town of Union on Ribes eradication since June 1. He is assisted by one laborer furnished by the American Optical Company. The purposes of this work are to eliminate non-Ribes areas, eradicate Ribes where practicable, and to designate areas in need of crew work. This starting crew will be gradually built up and eventually do crew eradication on the designated areas.

J. E. Riley, Jr. Conn.

BLISTER RUST CONTROL BEING PUT INTO OPERATION BY MICHIGAN
CAMP FIRE GIRLS

A recent letter from Miss L. M. Palmer, Leader of the Camp Fire Girls at Camp Keewano Wohelo, Mich., describes the work being done by them at their summer camp near Holland.

"In keeping with the Camp Fire Girls' National project of Reforestation and Conservation" and the Grand Rapids Camp Girls' objectives, the Grand Rapids Camp Fire Girls, at their summer camp Keewano Wohelo, near Holland, Michigan, commenced carrying out the latter part of that project by removing in the vicinity of their camp, some four thousand seven hundred thirteen gooseberry and wild currant plants to help prevent any local attack of the "White Pine Blister Rust."

"Fifty Camp Fire girls took part in the campaign. Count was taken by each individual who then reported to her squad leader. Only an hour and a half was spent in actually pulling up the plants. The highest number removed by any Camp Fire Girl was reported by Sophie Kicz with three hundred fifty nine plants. Three others had over three hundred to their credit. One "Blue Bird," Jane Boone, nine years old, gathered one hundred twenty-two. Another of her partners nearly reached her score with one hundred eleven.

"This attempt to stay the inroad of the "Blister Rust" into camp will be repeated once each week during the summer camp sessions. It is the Grand Rapids Camp Fire Girls summer camp nature project."

CONNECTICUT NEWS

Experimental work to obtain supplementary data necessary to complete the crew efficiency experiment started two years ago, was started in Canaan May 10, with a five-man crew and foreman. Messrs. Fivaz and Schofield took the data for this experiment. Rain interfered considerably with the field work, which was completed May 31st instead of May 28, as planned. The results of this experiment will be given later.

A disease and forest pest exhibit which features blister rust has been used in the High School at Wallingford for the last month. It was borrowed for a few days by the Director of Elementary Agriculture of the State Department of Education for use in his teachers meetings at Hartford. It will be moved June 27 to Meriden for use in a summer school conducted by Mr. Jurale of the Lincoln High School.

J. E. Riley, Jr. Conn.

FIGHTING SPREAD OF SPORES OF WHITE PINE BLISTER RUST IN MAINE

W. O. Frost of the State Forestry Department, in charge of white pine blister rust control, has been passing two days in Bingham checking the white pine blister rust eradication work being carried on by the S. D. Warren Company on pine lands, especially around their new forest tree nursery and at their various white pine plantations in that vicinity.

"The wet weather we have had this spring," said Mr. Frost, yesterday, "is very favorable for a great spore spread from the trees having blister rust to the currant and gooseberry bushes, which a little later on will be spreading this disease to more white pines. Wet weather is very conducive to spore spread and germination. This will probably be borne out by an increased outbreak of the rust in unprotected areas within a year or two.

"All white pine owners should bear this in mind and take the necessary precautionary measures, remembering that the only way to prevent blister rust is to remove all varieties of currant and gooseberry bushes within 900 feet of white pine."

Kennebec, Me. Journal. June 14, 1927.

NEW ENGLAND BOXES BRING \$20,000,000

The business of manufacturing wooden boxes is worth more than \$20,000,000 a year to New England. Of this huge business it is noteworthy that all its revenues, practically the entire amount, is spent in New England for native raw material, local labor and for freight charges of New England railroads.

A survey of New England box manufacture was recently completed by the New England council and revealed some unusual facts; one of the surprises developed by the survey was the fact that one-half of the total investment in plant and equipment of the industry was centered in Massachusetts. It had been supposed that the bulk of the industry was located in northern New England.

The survey also disclosed that the wooden box manufacturers use what might be called the waste product of the higher grade wood that goes into the building material. The revenue to building material concerns from this source aids materially in the reduction of their product.

International News Service. 5/9/27.

NEW HAMPSHIRE 4-H BOYS AND GIRLS PRACTICE FORESTRY

Until the last four or five years little thought has been given to teaching boys and girls of New Hampshire the need for the growing and maintaining of forests on our non-agricultural land. Over five hundred boys and girls of the State have entered into the actual practice of forestry with all the enthusiasm of youth. These future landowners in our rural communities are familiarizing themselves in forest management by planting trees on idle land, thinning and pruning growing pine stands, learning the names and uses of the local forest trees by making wood collections.

Woodrow Foss in the town of Barrington spent days releasing young white pine from overtopping gray birch. He was successful in urging other boys in the town to try their hand in the improvement of the home woodlot.

Kenneth Morgan of Wolfeboro thinned and pruned nearly an acre of growing pine this past winter and planted 2,000 white pines this spring.

Earl Gray of North Haverhill has thinned and pruned over two acres of young growing pine and has planted 3,000 trees since midwinter. Many similar examples of woodlot improvement by boys in the state could be related. Over 250 4-H boys and girls planted this spring 166,000 pine trees. These boys are not only interested in planting and improving their home woodland, but take an active interest in fire protection and blister rust control. They are always concerned in protecting their woodlots from these dangers and are for the most part able to recognize the Blister Rust disease. Not only have they interested themselves in forestry, but have in many instances influenced their elders to take an active interest in the proper management of the farm woodlot.

(K. E. Barraclough, Extension Forester,)
New Hampshire Forests. June, 1927.

Note:- State Leaders and Agents in other States! Are the 4-H boys and girls clubs in your districts that are in forestry clubs as well acquainted with the control of the blister rust as they are in New Hampshire?

R.G.P.

BLISTER RUST TO BE DISPLAYED AT THE SUMMIT OF THE MOHAWK TRAIL

Advantage of an opportunity to place a display in Conway was taken May 28. It was a combination of Memorial Day and an Old Home Day, with the dedication of a gun on the Common. The display was placed on public property by permit of the selectmen. This is the first of the heavy semi-permanent type of display to be put up in the state. At a later date a similar display will be placed on the summit of the Mohawk Trail.

G.S. Doore. Massachusetts.

RHODE ISLAND BLISTER RUST NEWS ITEMS

A trip was taken to the Pembroke, Massachusetts, infection area Thursday June 9, by Commissioner of Agriculture, Mr. Harry R. Lewis, Professor Stene, Chief, Bureau of Entomology, Mr. Harry Horovitz, Superintendent of Field Work of the Bureau of Entomology, Agent A. W. Hurford and State crew foreman, Mr. Leslie Pellett to acquaint Commissioner Lewis and the others as to the serious results blister rust may bring about if left unchecked.

At Pembroke, the party was joined by Mr. Cook, State Forester of Massachusetts, and Mr. E. C. Filler, Federal Supervisor of Blister Rust control. Mr. Filler gave an interesting and instructive talk as to the manner in which Blister Rust started in the area and the characteristics of the disease as shown on the various trees. The party was much impressed with the seriousness of the disease.

Later in the month, the State scouts were sent to this area to become acquainted with blister rust infections as part of their training.

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At the present time a study is being made by Agent A. W. Hurford of the areas in the State eradicated since 1917, when the work started. Approximately two days is being spent going over each year's work in studying what areas need to be reeradicated first. This brief study of each area is being carried on because it is necessary to obtain some data for the purpose of planning the next year's work. The method of checking old areas is generally that of scouting along brooks and swamps; since ribes are localized and found, as a rule, only in such places in Rhode Island. It is not desirable to spend much time running many strip lines and collecting more complete data at present.

A. W. Hurford. Rhode Island.

HAS VALUABLE PIECE OF PINES IN NEWFIELD, CONN.

Harry Bowman, fire warden in Newfield, has a piece of natural pine woods, which is a valuable part of his farm holdings. The trees are native white pine of valuable quality. Mr. Bowman has helped eradicate currant and gooseberry bushes within a distance of 900 feet of his pines. Assistance in the work was rendered by Ernest Clark of Litchfield, blister rust control agent for Litchfield county. Although there is little merchantable saw timber as yet, the stand has reached such a size that Mr. Bowman, if he desired, could make a loan from the Federal Land Bank with the young pines as part security.

The Torrington (Conn.) Register. 6/28/27.

NEW CANADIAN REGULATIONS AFFECTING CURRANTS AND GOOSEBERRIES

CANADA

DEPARTMENT OF AGRICULTURE

DESTRUCTIVE INSECT AND PEST ACT ADVISORY BOARD

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REGULATIONS UNDER THE DESTRUCTIVE INSECT AND PEST ACT

P.C. 717

Effective on and after April 20, 1927.

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REGULATION NO 8
(Domestic)

RESTRICTING THE SALE OF ALL SPECIES AND VARIETIES OF BLACK CURRANTS
IN CANADA.

On and after June 1, 1927, it shall be illegal to sell or otherwise dispose of for planting or other purposes all species of black currants, including horticultural and standard commercial varieties thereof, within and throughout the Dominion of Canada, except within the provinces of Alberta, Manitoba and Saskatchewan and the counties of Brant, Bruce, Dufferin, Elgin, Essex, Grey, Haldimand, Halton, Huron, Kent, Lambton, Lincoln, Middlesex, Norfolk, Oxford, Peel, Perth, Waterloo, Welland, Wellington, Wentworth and York in the province of Ontario.

Explanation of Regulation

Owing to the grave menace to Canada's most valuable of forest trees, viz., all five-leaved pines, caused by and through the fact that all types of black currants growing in their vicinity are potential hosts of the white pine blister rust it has been decided to discourage and, if possible, effect the discontinuance of the cultivation of black currants in all areas throughout the Dominion where the white pine may be considered a commercial forest tree.

The regulation does not affect the marketing of the fruits of any standard commercial variety of black currants nor the sale of any standard commercial variety of gooseberries, red or white currants, and their fruits.

Continued

REGULATION NO. 8 (Foreign) 2nd Revision

PROHIBITING THE IMPORTATION OF CERTAIN VARIETIES OF CURRANTS AND GOOSEBERRIES
INTO THE DOMINION OF CANADA FROM ALL COUNTRIES

The importation into the Dominion of Canada of rooted plants, grafts or cuttings of currants and gooseberries (Ribes and Grossularia) from all countries is prohibited. Provided, however, there is no restriction on the importation of standard commercial varieties of gooseberries and red or white currants cultivated for their edible fruits only, nor on the fruits of either currants or gooseberries.

Explanation of Regulation

Certain wild and cultivated currants, and gooseberries, essentially black currants, constitute an obstacle to the control of white pine blister rust, whereas the standard commercial varieties of gooseberries and red or white currants, cultivated for their edible fruits only, have proved no serious menace to white pine in Canada. The latter, therefore may henceforth be admitted, while the former remain on the prohibited list. The regulation does not affect the importation of the fruits of any of the varieties mentioned.

All communications relating to the above should be addressed to the Secretary, Destructive Insect and Pest Act Advisory Board, Department of Agriculture, Ottawa. Letters so addressed may be forwarded free of postage from any point in the Dominion of Canada.

All applications for permits to import currants and gooseberries should contain a complete list of the varieties desired.

* * * * *

Dr. S. B. Fracker, Federal Horticultural Board, writes of the new Canadian regulations as follows:-

In supplying information on this subject to nurserymen, however, it should be noted that Federal Quarantine No. 63 of the U. S. Department of Agriculture prohibits the movement of currant and gooseberry plants from every State of the United States "into or through" any other State or the District of Columbia, except under certain restrictions. It will therefore be necessary for all shipments of Ribes going into Canada to comply in full with the regulations of Quarantine No. 63, except where shipments can go from one of the border States directly into Canada without passing through another commonwealth.

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BLISTER RUST EXHIBIT AT THE POST OFFICE

In Cornwall Hollow, something like a quarter of a mile south of the General Sedgwick monument and cannon erected by the federal government in honor of the man who was killed in the civil war after twice declining the command

of the army of the Potomac, there stands a large, native white pine tree. This pine is open-grown and consequently not tall but widely branching. At four feet from the ground it has a circumference of 15 feet. The total height is only some 60 feet, or perhaps half the height of the Cathedral Pines, which are only about four or five miles distant. The beauty of the tree is perhaps in the magnificent spread of the tree-size branches, which cover some 30 feet in diameter. Its shadow falls on a little cemetery in which stands stones to commemorate the ancient names of Hurlburt, Sedgwick and Bradford. From this section comes the specimen of blister rust on exhibit in the lobby of the Torrington post-office.

E. D. Clark in Torrington (Conn.) Register. June 28/27.

ERADICATION WORK IN CALIFORNIA

While it is true that the white pine blister rust is not known to be present in the sugar pine region of southern Oregon or California, its eventual spread into these regions is certain. These several years of grace are welcomed as they afford an opportunity to work out some of the control practices in advance of the spread of the rust. Ribes eradication experiments have been carried on for the past two years. This work began in southern Oregon in 1925 and was continued in 1926 in California.

"Eradication work in California this year is located on areas adjacent to those eradicated last year. Work was started on May 18 with 23 men in camp. The work is being done in mature sugar pine - yellow pine type which is soon to be logged. Ribes on about 600 acres were eradicated by June 1. On this area 5898 G. roezli and 606 R. nevadense were found. The bushes fruit heavily in this mature timber. It is expected that by eradicating them just before they have fruited, that the area will be made quite free from Ribes."

Western Blister Rust News Letter.

RIBES ERADICATION BY CREW OR AT 10 CENTS A BUSH

At Camp Sangamon in Pittsford, Vt., a summer camp for boys, the camp director offered ten cents a bush for all wild ribes destroyed by the boys. I had inspected the pine lot with the director and owner, Mr. S. K. Smith, and we had found Ribes quite plentiful but he refused to go to the expense of having a state crew, saying that his boys could do the work just as well. He turned a dozen boys loose on the lot one day, and paid out a total of \$16.00 before he saw his mistake and decided to use the crew.

W. E. Bradder - Vermont.

BOY SCOUTS DEVELOP COMPETITION IN HUNTING FOR RIBES

The Boy Scouts at the Rutland County Council Camp have made Ribes eradication a good deal like playing a game. I had a foreman at the camp for a week. A group of six to eight boys under his direction, went over the

pine belonging to the camp. There were about seventy boys at camp and a new group worked each day, covering all the ground twice. It got so that the boys in the crew on the second time over thought it quite a stunt to find bushes that their camp chums had missed and they would always rub it into the fellows who were first over the ground when they returned to camp at night.

W. E. Bradder - Vermont.

CONSERVATIVE CUTTING PAYS

The following statement was furnished by F. M. Lord of Northfield (Merrimack County, N.H.), a farmer and the owner of a pine lot of approximately 100 acres which was cut over in 1912, and on which another cutting was made again in 1922. At the time of the 1912 cutting, Mr. Lord realized the necessity of cutting his woodlot along practical forestry lines. Provisions which he made in the agreement with the purchaser and operator were that all trees below six inches in diameter, breast high, should remain standing; also logging roads should be built in such a way that little damage would be done to the small growth remaining uncut. The growth which was left standing after the cutting in 1912, reached a marketable age and size in 1922. Again the cutting was restricted to a six inch diameter. The figures furnished by Mr. Lord of the amount received from the timber cut off this lot in 1912 and 1922 are as follows:

<u>Number Board Feet Of White Pine Cut and Sold</u>		
1912	250,000	
1922	225,000	
Total		475,000
<u>Amount Received From Sale of Timber</u>		
1912 at \$9.00 per M.	\$2,250.00	
1922 at 11.00 " "	2,475.00	
Total		\$4,725.00

These figures prove the wisdom of selective cutting. Mr. Lord says, "Woodland owners should adopt the principles of practical forestry management because I know they would receive in dollars and cents, the full amount from the sale of their timber, and at the same time, would be assured of a continuous crop of timber. I expect to sell this growth which is now below six inches ten or twelve years hence. I will be able to do this, solely because of the restrictive provisions laid down at the time of the first cutting of the lot."

(T.J.King) New Hampshire Forests. March, 1927.

Note:- If some of the blister rust agents run across pine owners who think there is no money in white pine, and that therefore there is no need of protection from the blister rust, just cite this case of Mr. Lord of Northfield, N.H.

R.G.P.

FOREST PLANTING IN NEW HAMPSHIRE

According to Mr. L. N. Watson in the June, 1927 number of New Hampshire Forests, there were used in reforestation on state lands in New Hampshire this spring a total of 153,425 trees. Of this number 73,500, or 48%, were white pine, 700 were sugar pine, the remainder being red pine, white spruce, white ash, and poplar. The planting of sugar pine is in the nature of an experiment.

MERRIMACK COUNTY FORESTRY ASSOCIATION

Thomas J. King, Blister Rust Control Agent, Elected Secretary

For the first time in the forestry history of New Hampshire woodlot owners of Merrimack county gathered in Concord May 5th for the purpose of organizing a county forestry association. The object of this movement was to promote the development of the farm woodlot in this county through more efficient management.

Milton J. Walker of Contoocook, the author of the Walker Forest Classification Law was elected first president and Thomas J. King, Blister Rust Control Agent of Merrimack county was named secretary.

* * * * *

K. E. Barraclough, Extension Forester of the University of New Hampshire, emphasized the necessity of treating timber as a farm crop and advocated that its culture should be a continuous one and that the practice of wiping out a steady income of the farm ought to be discontinued. Thomas J. King reviewed the control of white pine blister rust throughout the state, going into some detail on what had been accomplished in Merrimack County.

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A set of by-laws were adopted by the organization. Any woodlot owner is eligible for membership.

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New Hampshire Forests. June, 1927.

That old pasture may bring a long dividend yet. It costs from \$10.00 to \$15.00 per acre, including labor, to set out white pine or other timber. Think it over!

AECIAL PRODUCTION ON SLASH

In December, 1926, one of the Maine agents cut a section of a five inch white pine about two feet long, showing a typical blister rust canker. The specimen was carried around to Grange talks etc., during the winter. When not in use for educational purposes, the specimen was kept in an unheated garage on a pile of dry boards. By the middle of April, aecia were produced around the entire canker. The agent had always been a bit skeptical about aecial production on slash but this proved the point rather conclusively.

S. D. Conner, Maine.

REGARDING U. S. GEOLOGICAL SURVEY MAPS

The attention of the Blister Rust Control Agents is called to the fact that U. S. Geological Survey maps should not be purchased in the field, except in cases of emergency, since the sheets can be obtained through the Washington Office at a very nominal cost. Maps can usually be supplied within a week from the time a request is received.

H.P.A.

COMPTROLLER'S DECISIONS

Traveling Expenses - Taxicab Hire
6 Comp.Gen. p. 571

Under paragraph 8 (a) of the Standardized Government Travel Regulations, effective October 1, 1926, the use of taxicabs is authorized between hotel or residence and station or wharf without the necessity of showing that a cheaper form of transportation was not available. However, where a traveler checks his baggage at the station and proceeds by taxicab to place of duty, returning to the station by the same means of conveyance, the presumption is that a less expensive form of transportation would have served the purpose, and reimbursement for the expense incurred is not authorized in the absence of a showing that a taxicab was necessary to the accomplishment of the particular travel in question.

PRINCE PINE

(Continued from the June Issue)

Prince Pine Loses His Neighbor, The Gooseberry Bush.

Prince Pine, the healthy young tree in Mr. Farmer's plantation, feared his neighbor, the Gooseberry bush, which grew near the stone wall. He was listening to Dr. Rust who was telling Mr. Farmer about blister rust, the disease that comes to white pines from currant and gooseberry bushes. Prince justly blamed the Gooseberry bush for the loss of the infected limb which Dr. Rust cut off to save his life, and he had no desire for a repeated operation.

Uproot the Gooseberry Bush.

Mr. Farmer also was alarmed for the safety of Prince and the other pines because he too now recognized the Gooseberry as a source of danger so long as it remained near his plantation and he recalled that he had seen many other gooseberries along the wall the day he found the dead pines. He started to cut down this bush with his pocket knife but Dr. Rust stopped him. Instead of cutting it the doctor pulled the bush and hung it, roots up, in the crotch of a small maple tree. "Your method would give only temporary relief," said the doctor, "because the bush would sprout again and soon be as large as ever." "By uprooting and hanging the bush in a tree, like this, the sun and wind will dry the roots in a few hours so that there is no danger of sprouting."

Don't Take Chances--Be Sure to Get All The Bushes!

Mr. Farmer was eager to uproot the other gooseberries he had seen and at once started out to find them. He located and pulled a few but because of his haste and inexperience he missed a great many. Dr. Rust then explained that it is better to organize a systematic search for the bushes. Interpreting Mr. Farmer's look of inquiry, he stated that the systematic search is the result of several years experimenting by the State Department. Successful methods of finding these bushes have been developed and the state is now endeavoring to teach the proper methods to the pine growers. This is being done by loaning the services of an experienced Scout who directs the actual work. The owner is urged to take part in destroying the bushes and is required to furnish whatever extra help is needed. Mr. Farmer declared this to be a very fair proposition and signified his desire to do the work as soon as the Scout could come. Accordingly Dr. Rust made an appointment for the following week and then suggested that they examine more of the plantation.

Dr. Rust Points Out The Different Kinds of Bushes.

As they walked among the pines Dr. Rust pointed out many bushes that Mr. Farmer did not recognize as currants or gooseberries. A gooseberry bush grew under the big maple at the edge of the plantation. That part of the ledge where the water seeped through the crevices was covered with a mass of vine-like shrub which Dr. Rust called skunk currant. Mr. Farmer vowed he would remember them after the doctor crushed some of the leaves for him to smell. The odor recalled to his mind the mess he got into the day his dog Skipper caught the skunk. At the edge of the swamp the doctor found some wild currant bushes.

Most of them were red but a few with gold spots on the under side of the leaves were black currants.

Control Blister Rust and Grow Pine

"I did not realize that there are so many wild currants and gooseberries," said Mr. Farmer as they returned to Prince. "Do you think it is safe to grow white pine when there are so many bushes to spread this disease?" he asked Dr. Rust. "By all means it is safe and worth while," replied the Doctor. "White pine produces the most valuable timber crop in the state." "Then, too, in the development of forestry the young pine is especially adaptable to good forest practices." "There are reasons why the tree should continue to be grown." he went on, "if you keep the disease under control." "The scientists did not stop when they determined the cause and effects of the disease but continued their investigations until they developed practical methods of control." "By these methods the pine growers are now able to protect their own forests at very small cost." "The pine owner just now needs more adequate information about the nature of the disease and the methods of control and that is why the State Department is endeavoring to inform and instruct him." "Do not hesitate to grow pine," concluded the doctor, "but make sure that you destroy all your currant and gooseberry bushes."

W. J. Endersbee
The Berkshire (Mass.) Farmers' Bulletin
June, 1927.

A CORRECTION

The Editor desires to correct the date of the Supplement to the June number of Blister Rust News, by Roy G. Pierce on "A Distinguishing Character of the Wild Black Currant (Ribes americanum). The date of the supplement was given as June, 1926 whereas it should have been June, 1927.

R.G.P.

HOLDS RIBES RECORD

Mr. Smith Hastings, eradication assistant in Warren County, New York, while working in the vicinity of Weavertown, found a skunk currant that measured 110 feet in length, with a leaf-bearing stem of 230 feet. There is no question but that Hastings holds the record for the longest skunk currant ever found.

G. E. Stevens, New York.

WARNING -- POISONOUS SNAKES

It is very likely that some of the Blister Rust Agents or some members of the eradication crews will be in snake country this summer, that is in regions where poisonous snakes abound. It would seem advisable for each crew to have some potassium permanganate with it for cases of emergency. In this connection an excerpt from a circular by the Biological Survey is in order:

"Treatment For Bites of North American Poisonous Snakes. There can be no doubt that the chief precaution to take in case of snake bite is to prevent systemic absorption of a fatal dose of venom from the amount contained in the tissues immediately surrounding the wound. To accomplish this, action must be prompt. Place a ligature above the knee or arm or leg. This will delay absorption of venom, but the ligature must be loosened for a short time every thirty minutes to prevent gangrenous mortification.

"Another means of minimizing absorption of the venom is by local incision of the area immediately surrounding the puncture made by each of the fangs. This cutting must be free in all directions, and especially so in the direction of the blood return to the heart. After the punctures have been opened and the blood has flowed freely, the wound should be carefully washed with a strong solution of potassium permanganate. Another method equally successful is to inject an aqueous solution of permanganate of potash with a hypodermic syringe into the puncture of each fang and then open the punctures with a knife as directed above. Permanganate of potash will neutralize about its own weight of venom and is effective against every class of snake venom."

The Washington Office has about 25 copies of each of two mimeographed circulars of the Biological Survey. One entitled "Poisonous Snakes of the United States" and the other, "Facts About Snakes". These will be sent upon request.

R.G.P.

P E R S O N A L S

Mr. Dale Chapman was appointed agent July 1, with headquarters at University Farm, St. Paul, Minn.

Mr. Russel C. Hertzler has been appointed agent at Harrisburg, Pa. Mr. Hertsler's appointment was effective July 15.

Mr. Thomas H. Graham was appointed agent June 20, with headquarters c/o State Department of Agriculture, Trenton, N. J.

Mr. Julian F. Cannon, formerly employed as an accountant in the Washington Office of Blister Rust Control, has been appointed cost accountant and Deputy Disbursing Officer at the Helium Plant at Fort Worth, Texas, under the Department of Commerce.

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Dr. Carl Epling of the University of California was a visitor to the Washington Office on June 20, 1927, on his way to Europe.

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Mr. Kirk Keith Stimson was married to Miss Lilla Blanchard Chase on Saturday June 18, 1927, at Wilton, N. H. Congratulations K. K.

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Effective July 7, 1927, Mr. Louis A. Barr, messenger in the Office of Blister Rust Control, was transferred to the Disbursing Office.

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Mr. David J. Stouffer, was appointed agent with headquarters in Lansing, Michigan, July 1, 1927. Mr. Stouffer will have charge of co-operative blister rust control activities in Michigan.

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Mr. J. E. Wilfong arrived June 20 to join the Connecticut Blister Rust force for the summer season. Last year Mr. Wilfong scouted the town of Norfolk to determine the need of re-eradication of previously worked areas and to designate unworked areas in need of eradicating. He will scout in Colebrook this year.

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Mr. S. R. Hamilton, field supervisor on eradication work in Connecticut, has been transferred to the soils study experiment under Mr. Hicock.

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Mr. A. E. Fivaz has Messrs. Thurston L. Corbett, Lawrence P. Gould, and John D. Griffiths assisting him with experimental field work in New York.

WHITE PINE BLISTER RUST CONTROL
DISTRICTS AND PERSONNEL IN NORTHEASTERN AND LAKE STATES
July 7, 1927.

<u>State</u>	<u>District</u>	<u>Agent in Charge</u>	<u>Agent's Address</u>
<u>Maine</u>	1. Cumberland County.....	S. D. Conner	904 Washington Ave., Woodfords, Me.
	2. Oxford County.....	D. S. Curtis	North Bridgton, Maine.
	3. Lincoln & Knox Co's.....	J. M. White	Box 133, Wiscasset, Maine.
	4. Androscoggin, Sagadahoc, and part of Kennebec Counties.....	G. H. Kimball	374 Court St., Auburn, Maine.
<u>N.H.</u>	1. Upper Grafton and lower Coos Counties.....	T. L. Kane	c/o Farm Bureau, Woodsville, N. H.
	2. Lower Grafton and part of Sullivan Co's.....	G. F. Richardson	2 Billings Block, Lebanon, N. H.
	3. Carroll County.....	S. H. Boomer	c/o Farm Bureau, Conway, N. H.
	4. Strafford and Belknap Counties.....	W. J. Cullen	" " " Rochester, N. H.
	5. Merrimack and part of Sullivan Counties.....	T. J. King	" " " Concord, N. H.
	6. Rockingham County.....	L. C. Swain	" " " Exeter, N. H.
	7. Hillsborough County.....	C. S. Herr	" " " Milford, N. H.
	8. Cheshire and part of Sullivan Counties.....	F. J. Baker	" " " Keene, N. H.
<u>Vt.</u>	1. Central Conn. River Valley District.....	F. H. Rose	Box 42, White River Jct., Vt.
	2. Chittenden County.....	S. V. Holden	Box 472, Burlington, Vt.
	3. Addison and Rutland Counties.....	W. E. Bradder	109 Oak St., Rutland, Vt.
<u>Mass.</u>	1. Middlesex County.....	W. T. Roop	32 Paul Revere Road, Arlington Heights, Mass.
	2. Norfolk & Plymouth Co's.....	E. M. Brockway	c/o Extension Service, 106 Main St., Brockton, Mass.
	3. Upper Worcester County.....	William Clave	Box 173, Gardner, Mass.
	4. Lower " " " " " " " " " " " "	E. J. McNerney	19 Court St., Worcester, Mass.
	5. Franklin and part of Hampshire Counties.....	G. S. Doore	c/o Extension Service, Sheldon Bldg., Greenfield, Mass.
	6. Hampden and part of Hampshire Counties.....	R. E. Wheeler	719 Bridge St., W. Springfield, Mass.
	7. Berkshire County.....	W. J. Endersbee	81 Grove St., Great Barrington, Mass.

<u>R.I.</u>	(District includes all of state)...	A. W. Hurford	Room 706, Y.M.C.A., Providence, R. I.
<u>Conn.</u>	1. Litchfield County.....	E. D. Clark	R.F.D. #1, Litchfield, Conn.
	2. Eastern Conn. District...	H. J. Miles	Box 62, Putnam, Conn.
<u>N.Y.</u>	1. Essex, Clinton, and Franklin Counties.....	B. H. Nichols	Lewis, N. Y.
	2. Warren County.....	N. H. Harpp and E. G. Woodward	Warrensburg, N. Y.
	3. Washington and Rensselaer Counties....	I. S. Bowlby	17 Pearl St., Hudson Falls, N.Y.
	4. Saratoga, Schenectady, and Albany Counties....	C. E. Baker	Saratoga Farm Bureau, Saratoga Springs, N. Y.
	5. Lower Hudson River Valley District.....	H. G. Strait	Farm Bureau Office, Hudson, N. Y.
	6. Otsego, Schoharie, and Delaware Counties.....	H. A. Williams	3 Spring St., Oneonta, N. Y.
	7. Fulton, Montgomery, and Hamilton Counties.....	J. W. Charlton	Farm Bureau Office, Gloversville, N. Y.
New Jersey.....	T. H. Graham.....	c/o E. G. Rex, (Temporary)	State Dept. of Agriculture Trenton, N. J.
Pennsylvania.....	R. C. Hertzler (Temporary)	3232 Green Street, Harrisburg, Pennsylvania.	
Michigan.....	D. J. Stouffer	Lansing, Michigan.	
Minnesota.....	Dale Chapman (Temporary)	University Farm, St. Paul, Minn.	
Wisconsin.....	H. J. Ninman	Capitol Annex, Madison, Wisconsin	

STATE LEADERS

<u>State</u>	<u>Leader in Charge</u>	<u>ADDRESS</u>
Maine.....	W. O. Frost	State Forestry Dept., Augusta, Maine.
New Hampshire.....	L. E. Newman	State Forestry Dept., Concord, N. H.
Vermont.....	S. V. Holden	Box 472, Burlington, Vt.
Massachusetts.....	C. C. Perry	Room 136, State House, Boston, Mass.
Rhode Island.....	A. W. Hurford	Room 706, Y.M.C.A., Providence, R. I.
Connecticut.....	J. E. Riley, Jr.	State Agricultural Experiment Station, New Haven, Conn.
New York.....	H. L. McIntyre J. D. Kennedy-Ass't.	Conservation Commission Albany, N. Y.

STATE COOPERATORS

<u>State</u>	<u>Cooperators</u>	<u>Address</u>
Maine.....	Neil Violette, Forest Commissioner	Augusta, Maine.
New Hampshire.....	J. H. Foster, State Forester	Concord, N. H.
Vermont.....	R. M. Ross, Commissioner of Forestry	Montpelier, Vt.
Massachusetts.....	R. H. Allen	Room 136, State House, Boston, Mass.
Rhode Island.....	H. A. Lewis, Commissioner	State House, Providence, R. I.
Connecticut.....	W. O. Filley, Station Forester	Agri. Experiment Station, New Haven, Conn.
New York.....	W. C. Howard, Supt. of Forests	Conservation Dept. Albany, N. Y.
New Jersey.....	E. G. Rex	Bureau Statistics & Inspection Trenton, N. J.
Pennsylvania.....	W. A. McCubbin	Bureau Plant Industry, Harrisburg, Pa.
Michigan.....	E. C. Mandenberg	State Dept. Agriculture, Lansing, Mich.
Minnesota.....	A. G. Ruggles	University Farm, St. Paul, Minn.
Wisconsin.....	E. L. Chambers	Capitol Annex, Madison, Wisconsin

FEDERAL PERSONNEL

Supervisor-in-charge.....	E. C. Filler	Office of Blister Rust Control, Room 403, 408 Atlantic Ave., Boston, Mass.
Agent-in-charge.....	(Experimental work) A. E. Fivaz	Box 51, Warrensburg, N. Y.
Agent-in-charge.....	(Quarantine Inspection) R. A. Sheals	39 Glendale Ave., Providence, R. I.
" " ".....	(Epidemiology of the Rust) L. H. Pennington	College of Forestry, Syracuse, New York.

Assistant.....(Quarantine and
Experimental Work)...L. W. Hodgkins 6 Anderson St., Taunton, Mass.
Assistant " " J. M. Corliss 408 Atlantic Ave., Boston, Mass.
Assistant ..(Boston Office)..... K. K. Stimson Room 403, 408 Atlantic Ave.,
Boston, Mass.

P U B L I C A T I O N S

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McCallum, A. W. White Pine Blister Rust. Dominion of Canada, Department of Agriculture, Division of Botany. Circular 48. 8 pages. 1927.

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Ninman, H. J. and W. C. Thompson. Effect of Pasturage on White Pine Reproduction and on Timber Quality. Journal of Forestry. Vol. 25, No. 5, p.549-554. May, 1927.

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1. 1990年12月25日，在“九七”香港回归前，香港各界人士纷纷发表文章，就香港前途问题提出自己的看法。

Journal of Interpersonal Violence

Number of hauls	<i>P. setiferus</i> (%)	<i>P. setiferus</i> + <i>P. setiferus</i> + <i>P. setiferus</i> (%)
1	10	5
2	35	10
3	65	15
4	85	18
5	95	20
6	100	22
7	100	25
8	100	28
9	100	30
10	100	35

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BLISTER RUST NEWS



August 1927.

Volume XI

Number 8

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS
Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 11, No. 8.

AUGUST 1927

GOOD PROGRESS IN CONTROL OF WHITE PINE BLISTER RUST IN MAINE

Notwithstanding the wet weather in the spring and summer, the control of the white pine blister rust has progressed in a satisfactory manner, according to a statement made Thursday by W. O. Frost, the State Leader, who works under the direction of the Maine Forest Service.

The figures for July are not yet available but reports for May and June from various agents in York, Cumberland, Oxford, Androscoggin, Sagadahoc, Kennebec and Lincoln counties, show that the control work has been conducted with the State and federal governments cooperating with the towns and the owners of white pine.

These figures show that 375 white pine owners cooperated with the State in the removal and destruction of blister rust spreading plants, that is, all varieties of currant and gooseberry bushes. Over 800,000 wild and 360 cultivated gooseberry and currant bushes have been destroyed, thereby protecting over 10,000 acres of white pine. This work was conducted in 37 towns.

"We are now on the last half of the eradication season, which will end about Sept. 15, and we hope that there will be enough pleasant weather to complete the work in the cooperating towns," said Mr. Frost.

"The present season has been very favorable for spore spread and we may look for evidences of this spread to the pine within the next two years, as this disease, like other fungous diseases, spreads very rapidly during the wet weather.

"In my travels this year, while supervising the work, evidences of the disease have been found in every pine lot. In some lots as much as 81 per cent of the trees have blister rust.

"Pine owners are adopting the control measures and are seeing the necessity of them. It is only now and then that we find a non-believer who will not cooperate. When we do find a pine owner who will not cooperate, the State does the necessary control work, charges the cost of it to the town, and the town passes along the cost to the owner through taxation. This is necessary to protect adjoining pine owners."

Kennebec (Maine) Journal. August 9, 1927.

SCOUTING FOR BLISTER RUST IN NEW JERSEY

Mr. Graham and Mr. Grant who have been scouting the Red Bank section for the past three weeks have moved to the Morristown section to begin work there. The Red Bank section with the exception of several small areas including Sandy Hook peninsula have, however, not been completed. Permission must be secured for the privilege to trespass on several of these premises. Arrangements shall be made so that the scouting work in the Red Bank section can be completely carried out later in the season.

Infection on Ribes has been found at eight different places in the Red Bank section. However, they have been unable to find any white pine showing symptoms of the disease. Inquiry will be made of the weather officials on Sandy Hook concerning the direction of the prevailing winds during the months of April and May. This information may or may not give some information as to the direction of the aeciospore drift.

In the Morristown section, thus far infection has been found at five different places, again only on Ribes. These latter infections are in the vicinity of Gladstone, a town a short distance from Morristown.

August 9, 1927.

E. G. Rex

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EPIDEMIOLOGY STUDY PROGRESSES

A conference was held in Boston, August 1 to 3, between Messrs Filler, Posey, Pennington, and Pierce devoted to the subject of the epidemiology of the white pine blister rust.

Progress was reported on all lines of study, including:

1. History of the introduction of the blister rust.
2. The relation of distribution and abundance of native white pine to spread of rust.
3. The relation of Ribes nigrum infection centers to spread of the rust.
4. The relation of distribution and abundance of wild Ribes to spread of the rust.
5. The relation of distribution and abundance of pine infection to other factors influencing the spread of the rust.
6. Relation of climatic zones to the occurrence of infection.

That this study has progressed as fast as it has is due to the combined efforts of all the field men in the Northeastern States, as well as the leaders in the various projects connected with the study.

R. G. Pierce.

THE BLISTER RUST SITUATION IN PENNSYLVANIA

During the months of July and August a scout has been searching for blister rust on the eastern border of Pennsylvania. This region was chosen for his activity because it is south of the region where infection has been found in previous years, also because it adjoins areas where rust has been found in New Jersey, and also because this area lies between the known infected portion of the state and the main area devoted to nursery stock.

R. C. Hertzler, the scout in this area, reports up to August 20th that he has found blister rust on Ribes in fifteen locations in three counties; three cases in Northampton on black currants; eleven in Lehigh County on black currants, red currants and gooseberries; and one in Bucks County where he is now working.

There is also a report from L. O. Overholts of Pennsylvania State College of the finding of blister rust on wild Ribes in one case in Clarion County near the western border of the state.

In the eastern district the infections are very scattered and give the impression that they may have arisen from a general southward drift of aecio-spores in spring. The findings on red currants in several cases where these plants were quite isolated indicate something of this kind. In several of these red currant plantations the rust was rather severe.

In the areas which I personally visited in Lehigh County there was no evidence of pine infection, and pines here are so infrequent that establishment of the rust on them would be somewhat difficult.

The blister rust survey through the school children, which will be put under way all over the state on the first week in September, is likely to be very valuable at this time in bringing to light many cases of rust, which the limited amount of scouting that could be undertaken could not bring to notice.

W. A. McCubbin
Pennsylvania Department of Agriculture.

BLISTER RUST NOTES FROM NORTHEASTERN CONNECTICUT

The Grange meeting at Warrenville in Ashford, will take place on the evening of August 24. I am planning to give a short talk, show specimens and invite questions.

The Quinebaug Forestry Company is cooperating in eradicating Ribes on some 2500 to 3000 acres in Union. We found three or four areas where both pine and Ribes infection was severe, and Ribes were numerous. The work is costing about 80 cents per acre.

Herbert J. Miles - Conn.

RIBES ERADICATION IN LITCHFIELD COUNTY, CT.

Frank Tompkins, blister rust foreman, started Monday morning on the eradication of currant and gooseberry bushes on the pine plantations on Mohawk. His crew consists of Mr. Douglas, Mr. Errickson, veteran forest workers, and one new man. These white pines were set out by Mr. Cunningham of Litchfield some years ago in the old Schlittenhart pasture which at that time was overgrown with a tall thicket growth of "Goshen hardhacks". Contrary to the prediction of many, the little pines came through nicely, justifying the good judgment of Mr. Cunningham until now they are tall enough to look into a second story window and they have so shaded the hardhacks that there is hardly one left alive beneath their branches.

District Forester Parker's men camp in the white house, formerly the Levitt Clark place. Anyone wishing to see the blister rust prevention work on Mohawk near the Alaine White Stone tower, should drive to the gate near the Stone tower, coming in past the Harrison Ives residence just off the Goshen-Cornwall State road. Those desiring an appointment so that they may be sure of finding the crew among the dense tree growth should telephone in advance to Forester Parker or to Blister Rust Agent Clark through the Cornwall exchange, and obtain directions for the particular day and hour when they will arrive.

August 8, 1927,

Clipping from Connecticut paper.

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COOPERATION GOOD IN WINDHAM COUNTY, CT.

On April 8 a Brooklyn pine owner and I eradicated 27 cultivated red currants. On April 12 I destroyed 19 cultivated red currants and 6 gooseberries in the town of Thompson. I had been working for a year and a half with the owner to get his consent to the removal of these currants and gooseberries, and when he finally agreed for me to take them out I lost no time in doing it. At the same time another cooperator took out 24 red currants without my help.

Yesterday, July 14, I gave a talk and field demonstration at the Y. M. C. A. camp in Woodstock and removed 12 infected red currants. I have been asked to come again in two weeks and talk to the next group of boys, and two weeks after that to come and enlighten the Y. W. C. A. girls who will be there.

July 15, 1927.

Herbert J. Miles, Conn.

BLISTER RUST CONTROL FROM A CHIEF CLERK'S VIEWPOINT

For the past several years I have explained to casual inquirers such as salesmen, applicants for positions, visitors and others, something about our work in controlling blister rust. Persons of this type dropping in the office ask such questions as:

Do you think you can really control the disease?
How long does it take to eradicate Ribes from an acre?

Do you get all the Ribes by going over the ground one time, etc, etc?

Since these people were not interested enough to take time to read some of our publications on controlling the disease and the office scientific staff too busy to answer every Tom, Dick, and Harry, it fell to my lot to answer these questions as best I could. Also it has been necessary in connection with fiscal matters for me to explain many angles of the problems met by the field men in order that some point in connection with their expense accounts might be made clear. With these things in view, I was sent to the field to better acquaint myself with the control program and the actual conditions under which the men worked, spending the past two weeks in New England.

In company with Mr. Filler and Mr. David J. Stouffer, newly appointed agent in Michigan, I visited a number of infection areas. One of the places visited on our first day out of Boston was the Kittery Point, Me., infection center. I was very much impressed with this area as it answers my first question: Can the disease be controlled? Here many of the old pines are infected and dying. However, as a result of the eradication of the cultivated black currants which caused the infection and the wild Ribes in and near this stand several years ago, an abundance of new pine is coming on absolutely free from the disease. The young infections at Booth Bay, Lincoln County, Me., furnish a good example of how impossible it would be to grow white pine without eradicating the Ribes. A very large per cent of this stand is infected, and after seeing Kittery Point, I can visualize how this will look within a few years.

The Freeport, Me., area was the most impressive to me. Probably because the stand is not dense and the disease has progressed to the stage where it shows up at its maximum. In the Waterford, Vt., area I became acquainted with some of the problems that the men on the experimental phase of the work have to meet. In collecting experimental data on these large trees it was necessary for the men to climb practically every tree. The trees were then marked with white paint to show the stage of the disease:

A double band indicated trees killed by blister rust.

A single band indicated trunk infection.

A cross indicated branch infection.

The marking of the trees to show the stages of infection seems to be an excellent way of showing those who are not familiar with the disease the damage that the disease is doing in mature timber.

With T. J. King, Merrimack County, N.H., agent, I saw some of the problems met by the agent, and also got to work with a crew engaged in eradicating wild Ribes. Mr. King let me work with the crew which I think was very efficient. It was very interesting to see this work, which is the basis of our control program, and observe how much ground a crew can cover and apparently get every "Ribe". In my work with Mr. King, I actually experienced some of the "reasons why it was necessary in the interest of the Government to remain away from headquarters later than 6 o'clock". After Mr. King had put in a full day and part of the night on his job, I had the privilege of returning with him to his headquarters where we arrived exactly at midnight.

An interesting day was spent with W. T. Roop of Massachusetts, and one of his crews engaged on the eradication of cultivated Ribes. Mr. Roop takes his "office" with him in his car. If the rain stops his field work, he takes out his typewriter and makes out reports, writes letters and attends to other office matters.

In summing up my impressions of this trip, I would say:-

- First: That, there is a very high type of men engaged in blister rust work, and that they believe in the work absolutely and give their best service to it.
- Second: That, the eradication of Ribes controls the disease and the efficiency of this work is most important. A few Ribes left by a crew might not be found by the inspector and under favorable conditions may cause much damage to nearby pine stands.
- Third: That, in the eradication of cultivated Ribes there is great importance in having men who are tactful in dealing with owners, otherwise much harm could be done to the cooperative program.
- Fourth: That, white pine is a real crop in New England and as a result of this trip I feel better able to be of service to the field men.

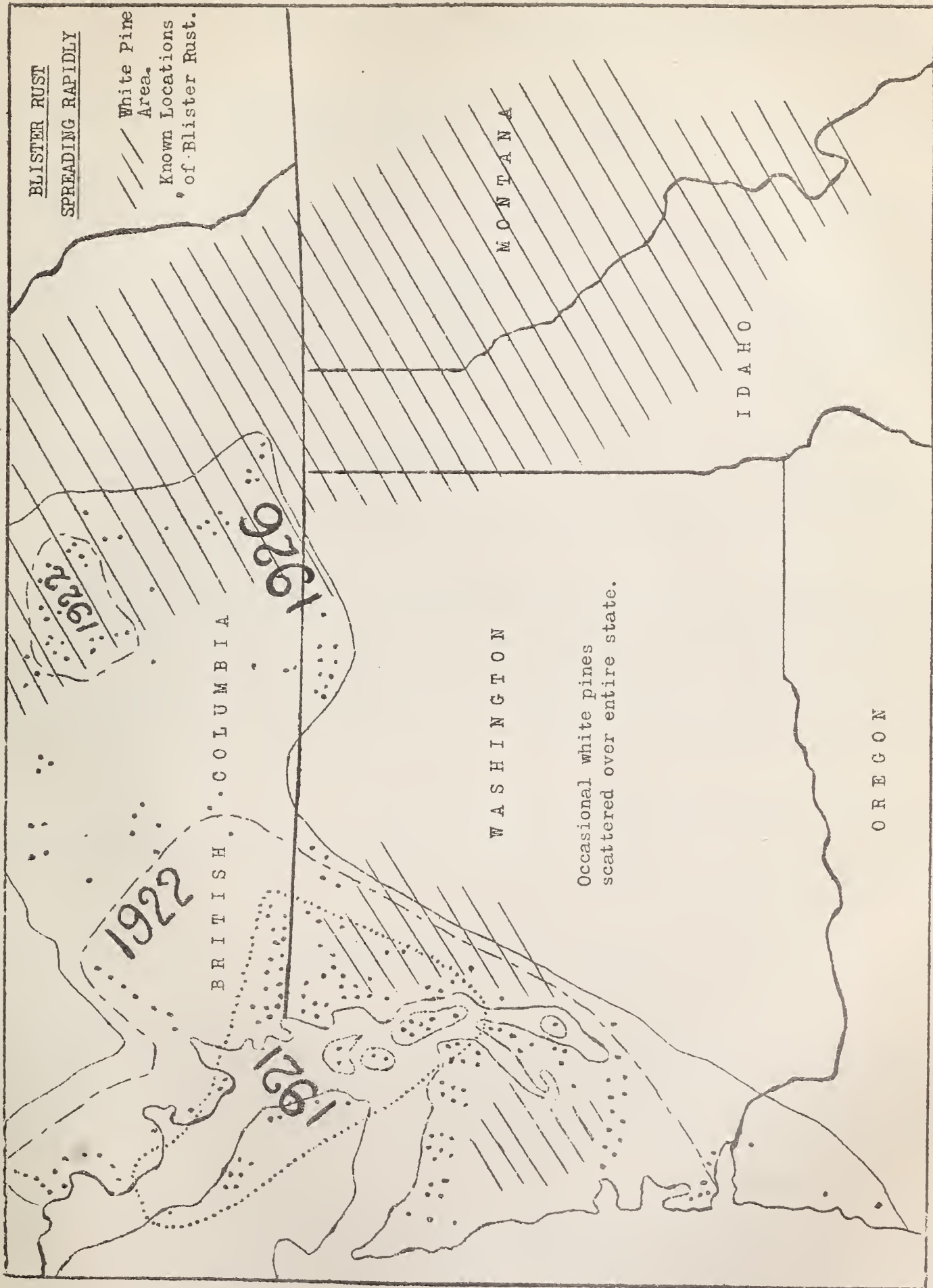
H. P. Avery.

Q U A R A N T I N E S

Miss M. A. Thompson, Junior Plant Quarantine Inspector, who handles the detailed work in connection with the granting of federal permit for interstate shipment of cultivated currants and gooseberries under provisions of quarantine 63, is now in the field on a tour of several eastern and midwestern states.

At Riverton, N.J. a very profitable call was made at the Japanese beetle quarantine headquarters.

Miss Thompson is making inspection of nursery shipments at various mid-western points.



From Summer Blister Rust News Letter No. 1, Western Office.

BLISTER RUST AGENTS ASSIST IN COMPILING DATA ON WHITE PINE AND
OTHER WOOD-USING INDUSTRIES OF VERMONT

The following table shows the number of board feet of lumber cut by sawmills in Rutland and Orleans Counties during 1926.

Species	Rutland County	Orleans County
White pine	1,886,500	11,000
Spruce and fir	3,477,500	4,172,000
Hemlock	980,000	1,095,000
Cedar	7,000	73,000
Total conifers	6,351,000	5,351,000
Total hardwoods	4,229,000	11,501,700
Grand total	10,580,000	16,852,700

The Vermont Forest Service cooperating with the Bureau of Plant Industry, U. S. Department of Agriculture, completed a survey to determine how white pine compared with other woods in production, value and use. The field work was done by the blister rust agents in connection with their blister rust control activities wherein each timber operator and user of white pine was asked to protect pine on his holdings and otherwise to aid in making the campaign to save the pines effective.

Green Mountain State Forest News. April, 1927.

Note:-The individual cut of each hardwood species is given in the original article.

- - - - -
FORESTRY EDUCATION IN CANADA

Forest conservation is being taught in 10,000 elementary schools throughout Canada, through the co-operative plan used by the Canadian Forestry Association. This commendable forestry educational program is made possible through voluntary individual contributions. The associations supplies a series of forestry talks to the schools.

Texas Forest News

Note To State leaders:-This looks as if the Dominion had the jump on the United States along this line. Do you know whether our white pine states have a similar plan of reaching the elementary schools with some simple and fundamental forest conservation truths. This seems to suggest an opportunity for some constructive work, and should such a plan be put into operation in your state, the protection of white pine from the blister rust should find its proper place in the forest conservation measures suggested.

R. G. P.

MEET PRINCE PINE

(Continued from July Issue)

Prince Pine Watches The Blister Rust Crew

Prince Pine rejoiced when he saw the sun creep over the eastern horizon because this was the day the men were to start the work of destroying the currant and gooseberry bushes in and around the plantation. A week had passed since Dr. Rust cut off the infected limb of Prince and pulled up his neighbor the gooseberry bush. As Prince looked at the dried up gooseberry hanging in the crotch of the young maple, he thought how fortunate it is for pine trees that plant doctors were able to determine the cause of that fatal disease, the blister rust, and find a remedy to prevent it. He was therefore happy when he awoke this morning to see the bright sun making its way into a clear sky because it meant that today the men could start destroying those bushes he feared so much.

Mr. Farmer and his Neighbor Combine Their Forces

Prince saw the men when they first came in sight on their way to the plantation. Mr. Farmer and the Scout were leading the way, Dr. Rust and Mr. Gardner in earnest conversation were close behind, while Freddie Farmer and Bill, Mr. Gardner's hired man, trailed in the rear. The scout carried a gunny sack suspended from a shoulder by a stout cord. Prince wondered what was in the sack but was too polite to ask. Freddie and Bill each carried a light grub hoe to be used in uprooting the larger bushes. Prince thought that Mr. Farmer had hired Mr. Gardner and Bill to help but later he found out that the two neighbors were combining their labor to do the work on both farms. Dr. Rust had found a great many dead pines, some of them mature trees, on Mr. Gardner's wood lot and had suggested the labor arrangement. The pines in Mr. Gardner's lot had grown from seed in the field and had never known the luxury of a nursery such as Prince knew, but they were none the less valuable and should be protected.

The Scout Organizes and Instructs The Crew

The attention of Prince now became focused on the Scout who was giving preparatory instructions for starting the search. As he talked, he arranged the men apace of each other with their backs to the stone wall and about eight feet apart. From left to right as they faced, Bill was first near an old road, Freddie was second, Mr. Farmer third and Mr. Gardner outer man on the right side. To him was given the gunny sack which contained 2-inch squares of shiny white paper to be used in marking a trail so that the men would be able to tell where they had worked. "Each man now has his position in line," said the Scout "and as you advance in search of bushes try to maintain your relative positions". "Bill, who is guide man, will follow along the roadway and the rest of you will keep abreast of him." Each of you are to search for currant and gooseberry bushes on a strip of about four feet on each side of you." "Mr. Gardner will drop pieces of paper frequently enough to mark a trail which he can follow on the return strip." "Now we are ready, let's start," concluded the Scout.

The men moved forward and the Scout fell in behind the line. They looked like a squad of soldiers deployed for skirmish with the enemy. It appeared for a while as though the enemy might successfully elude this invading army and only for the eagle eyes of the Scout it might never had been found. Bill was the first to pass by a gooseberry and Freddie was a close second. The Scout called them both back to pull the bushes and cautioned them to look more sharply. Mr. Gardner thought it a great joke that Bill should walk past a big gooseberry bush without seeing it, but Bill got even a little later when the Scout saw Mr. Gardner standing on one. Mr. Farmer was doing better than the others but that was because he had been searching for them at odd moments during the past week. He could find bushes of average size very well but was having difficulty in locating the small ones.

The Crew Learns the System and Finds Plenty of Bushes

As the crew advanced the men would forget to keep in their respective places. Bill saw a bush across the road and while he was pulling it Mr. Farmer and Freddie exchanged places, one of them being several yards in advance of position and the other lagging an equal distance to the rear. Mr. Gardner was constantly wandering away from the squad and on several occasions laid a trail at right angles to the proper course. In every case he had gone to pull a bush outside his individual strip. Gradually however they improved in maintaining the proper formation in line. Bushes were scattered and they were able to make good progress until they came to the swampy area at the far end of the pasture. Here the bushes were plentiful and by the time they reached the end of the strip each man had pulled more than a hundred bushes. This close and frequent association with gooseberries and currants greatly increased their ability to find those bushes. On the return strip Mr. Gardner followed the paper trail he had made and Bill made a new trail. Mr. Gardner was amazed at the many crooks and turns he had made in laying his trail but he succeeded in unraveling it and at the same time decided to steer a straighter course in the future. By the time they had emerged from the swamp area on this return, everyone was certain that no currant or gooseberry bush could escape him. The crew by this time had pulled nearly a thousand bushes. The remainder of the strip was less productive until they came near the stone wall where they found gooseberries numerous.

Dr. Rust, who remained only long enough to see the crew properly organized was leaving now to make other calls. He had assisted the Scout to direct the crew on these first two strips and was satisfied that good progress was being made. Other pines were in need of his help and he must go to them. He called to Prince Pine as he left that he would return for lunch the next day.

W. J. Endersbee,
The Berkshire Farmers' Bulletin. July 1927.

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Laurant C. Pingree, one of the blister rust control inspectors, a few days ago ran right into a monstrous black bear in the town of Albany, Oxford county. The bear was having a siesta on some ledges, and Mr. Pingree thought it was convenient to get away from that part of the world.

Portland (Me.) Press Herald.

A PLEA TO ASSOCIATE EDITORS AND FIELD MEN

The Blister Rust News lives on news received from the field; and unless we hear from you we can not print the news of your State. It is realized that summer is a period of intensive work on Ribes eradication, shifting of crews and securing of private cooperation, etc. From now on, however, there should be more time available which would permit the gathering and writing up of news items.

Don't forget us for the September number, or the office dog will set up one long how-w-l!

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A FURTHER NOTE ON THE INFECTION AREA AT FREEPORT, ME.

A description of the infection area at Freeport, Me., was given in the June number of the Blister Rust News. This area which is referred to also by Mr. Avery on page 214 constitutes but one-third of an acre in extent. Eighty-seven per cent of the trees were found infected in January, 1927. At that time it was believed that the total responsibility for the infection rested upon a number of rows of cultivated red currants, numbering 385 which were growing in an adjacent apple orchard. Though it was stated that no European black currants had been growing on the place, the owner later, in conversation with Dr. L. H. Pennington, reported that there were a few black currants among the red currants.

Roy G. Pierce.

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W. E. Bradder of Vermont interviewed L. Leonard in his district, trying to secure his cooperation. He "refused for the fourth time".

The above note seems to indicate a lack of comprehension upon the part of some pine owners as to the nature of the service the state and government are trying to render the public.

Well Bradder, there is one thing to say, and that is, if said pine owner keeps on refusing for a number of years longer there should be the finest kind of example of what the blister rust does to an unprotected pine lot. Let's hear how many Ribes he has per acre; and how much rust he already has, so that we can keep track of this "conscientious objector".

R.G.P.

(An actual fact from Bristol, Maine)

Reel Trouble in Three Scenes

- Scene 1. Ribes and Pine infection peacefully resting in rear of house. Owner not very favorable but will eradicate. Pet Kitty playing in yard.
- Scene 2. B.R. Foreman 2 miles away coming in a "Leaping Chevvie" with no brakes.
- Scene 3. Kitty runs into road. "Chevvie" connects. Exit Kitty, Foreman and Eradication.
- Unseen X (Poor Agent expressing his feelings at results in back ground)

J. White, Maine.

- - - - -

Between wet weather and haying Lincoln County has had exceptionally hard luck. Tons of hay are still standing in county at present time.

There are some serious infections in several of the towns. As a general survey practically every lot examined has Blister Rust in it.

The office force should be congratulated on the new itinerary (B.R. 39); it certainly is a great improvement over the old form.

J. M. White, Maine.

FOREST PLANTING IN VERMONT

White Pine Second in Quantity

Interest in forest planting is increasing rapidly. To date orders amounting to approximately 2,000,000 trees have been placed with the Vermont Forest Service. The following species of trees and quantities have been ordered.

Norway spruce	800,000	Red pine	475,000
White pine	530,000	Scotch pine	150,000
Larch, white spruce, black locust, white cedar			45,000

All of the available planting stock has been sold except Scotch pine, a few thousand of which are obtainable still.

Over 400 pounds of tree seeds will be sown this spring. From these seeds we should obtain 5,000,000 trees which will be available for outplanting three years from now.

Green Mt. State Forest News, April 1927.

P E R S O N A L S

Edward L. Joy was appointed blister rust control agent at Seattle, Washington, July 25, 1927.

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Charles Ball was appointed assistant messenger in the Washington Office, effective August 1.

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The Civil Service status of Miss Alma Bishop of the Washington Office has been changed from that of stenographer to scientific illustrator.

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Roy G. Pierce took a short trip to New England about the first of August, where he visited W. J. Endersbee, Blister Rust Agent, in the Berkshires of Massachusetts, the Boston Office and W. O. Filley in Connecticut. The trip was taken to confer with field men and to gather historical data on the early introductions of the rust, the data to be used in connection with the study on the epidemiology of the blister rust in the Eastern white pine belt.

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Charles T. Geiser, Washington office, left Washington August 2 on his vacation for an automobile trip through New York, New Jersey and Pennsylvania, returning August 15.

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David J. Stouffer, newly appointed agent in Michigan, writes that he is starting work in Oakland and Kent Counties, where centers of blister rust infection have been located in the past.

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Miss Alma Bishop and Miss Mary Francis of the Washington office are spending their vacations at the Pocahontas cottage, Virginia Beach, Va.

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S. B. Detwiler left Washington August 2 for an extended field trip to cooperating Eastern and Western States.

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Edgar T. Holland left Washington July 30 for a week's vacation. He took an automobile trip through New York and Pennsylvania.

P U B L I C A T I O N S

Blister Rust

De Koning (M.). Roest op Weymouth. (Blister rust of the Weymouth Pine.)--
Tijdschr. over Plantenziekten, xxxii, 11, pp. 314-315, 1926.

The author points out the great reluctance on the part of many Belgian silviculturists to give up the cultivation in Belgium of the Weymouth pine (*Pinus strobus*) as a consequence of its susceptibility to attacks of *Peridermium strobis* (*Cronartium ribicola*). Moved by public demand, the Belgian Forestry Council discussed the question at a meeting in 1925, and came to the conclusion that the eradication of this tree was undesirable owing both to its ornamental and industrial value. The measures recommended for improving the cultivation of the trees and for controlling the disease are that seedlings should be raised from seed obtained from healthy pines and bred in special nurseries under phytopathological control. In such nurseries all diseased seedlings should be removed during the winter and the remainder should be sprayed with Bordeaux mixture. The Council stresses the necessity of studying strains of the Weymouth pine for resistance to the disease in countries where climatic conditions approach those that obtain in Belgium, with the restriction that only seed from immune or but little susceptible strains should be allowed to be imported.

Detwiler, S. B. Black Currant is Nurse of Blister Rust.
Agriculture Year Book for 1926, pages 171-175.

White Pine

Wahlenberg, W. G. Age Classes of Western White Pine Planting Stock in Relation to Aspect of Planting Site in Northern Ida. U. S. Jour. Agri. Research. Vol. 33, No 7, 1926. pp. 611-619.

Planting investigations conducted on barren, burned-over slopes of from 25 to 30 per cent gradient and at an elevation of from 3,350 to 3,700 ft. with nursery stock of different ages showed the best survival in the older stock, namely, that which had been two years in the seed bed and two years in the nursery. The aspect of the site was quite as important as the kind of stock, the mortality being greatest on the western exposure. Sliding soil had a tendency to cover and kill trees, especially those in the youngest age classes. Height growth was, like survival, greatest in 4-year old stock. On the basis of net cost of surviving trees, 2-year seedlings were most economical on moderate sites, and 4- and 3-year old stock on less favorable sites.

Experiment Station Record. Feb. 1927.

BLISTER RUST NEWS

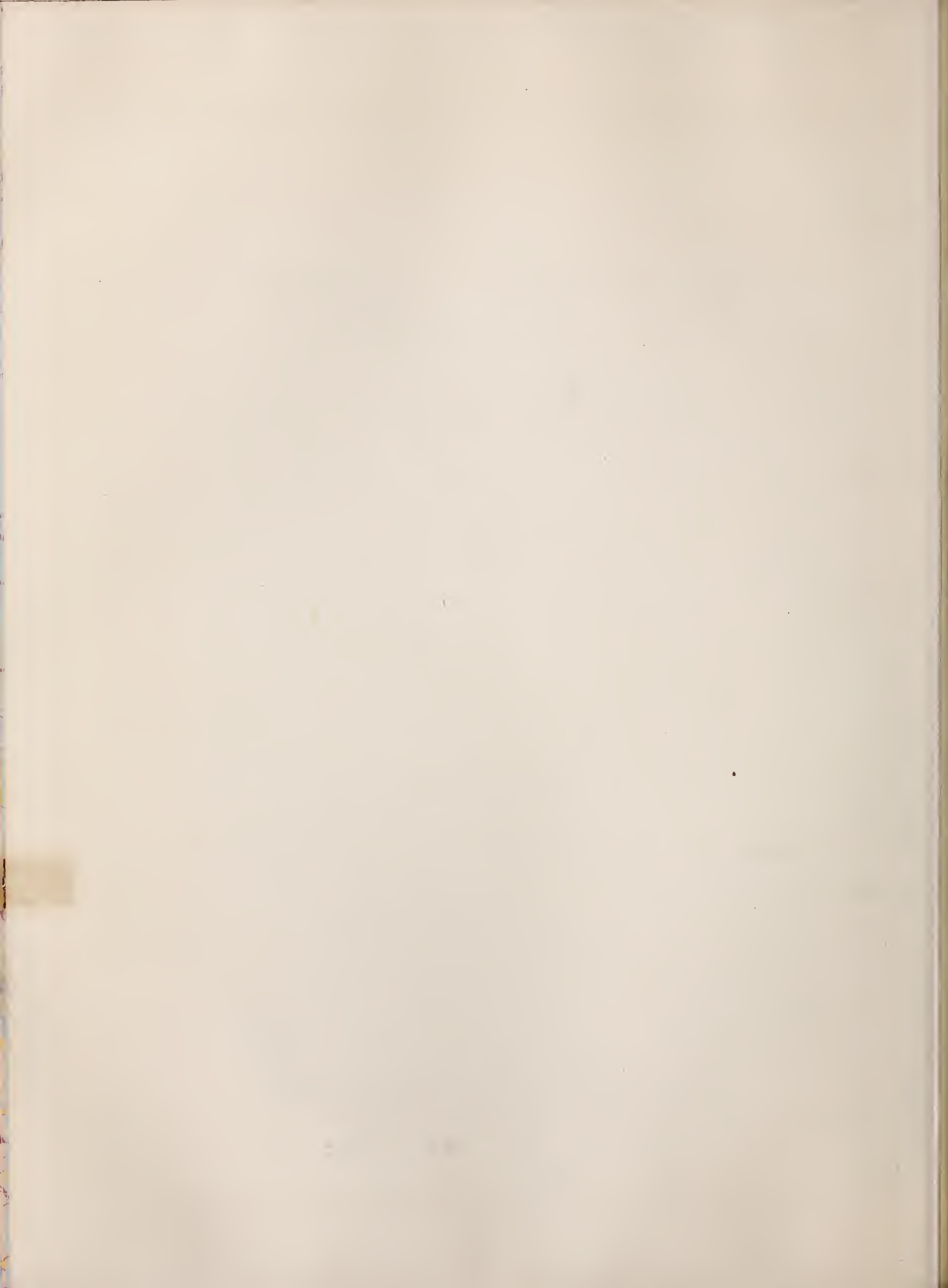


September 1927.

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Number 9

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control



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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D.C.

T H E B L I S T E R R U S T N E W S .

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 11, No. 9.

September, 1927.

AGED RIBES OWNER ANTICIPATES FOREMAN

Mr. Solon D. Conner, Agent in southern Maine, writes September 12 of the way some of the pine owners in his district pull out the currants and gooseberries without waiting for assistance.

It seems that Mr. Mitchell the scout interviewed Miss Meriam Boothby in Scarboro sometime in June, after scouting her property and finding Ribes thereon. She agreed to cooperate in taking out the bushes at a later date, so Mr. H. Green, the town foreman, reported at her home on September 7 to complete the work. Much to his surprise he found that the owner who is 72 years old had been diligently digging out the gooseberries by herself and that she had made a good job of it, too.

As Agent Conner writes, "She must have thought it best not to wait for the foreman, and the sooner out the better. This is one answer to the question 'Does the educational and service work pay?'"

Foreman Green said that all he had to do was to check over the work, and the check showed that the owner had eradicated 93% of the bushes.

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Note by Mr. Conner:- "This is not an isolated instance, for the foremen frequently find that the owner has beaten them to the job."

RESUMÉ OF THE WHITE PINE BLISTER RUST SITUATION

White Pine Blister Rust in the Northwest

Blister rust was found in the Northwest in the fall of 1921, when it was discovered at Vancouver, British Columbia, and shortly afterwards at Mount Vernon, Wash. Subsequent investigations indicate that it was introduced from France in 1910 on a shipment of young white pines that were planted near Vancouver. Field conditions favored its rapid spread and it became thoroughly established on western white pine in the coastal region of British Columbia. Following the discovery of the disease in the West, the department in 1922 and 1923 undertook a cooperative survey to determine the limits of infection and the possibilities of natural or artificial barriers delaying the advance of the disease into uninfested regions.

The season of 1923 was notable principally for the spread of infection southward through the dry belt of central British Columbia and through the Lake region of eastern British Columbia. Infection on cultivated black currants was found to be generally scattered over the dry belt and extended as far south as the central part of Okanogan County, Wash. Infection in eastern British Columbia was found to have extended southward to Grand Forks, British Columbia; Danville, Ferry County, Wash.; and to Nelson, British Columbia. It was also found that numerous Ribes were each year infected in the Puget Sound region of western Washington. Their proximity to native white pines made it probable that these pines were becoming infected.

Idaho Pine Threatened

In general, at the end of the 1923 field season, the Idaho white pine belt was directly threatened with invasion from the Northwest, through the dry belt and from the north through Nelson, British Columbia, and near-by points. Also, the increase of infection in western Washington constituted an ever-increasing menace of infection in western Oregon.

In 1924, the department in cooperation with the affected States and local agencies began a control program projected over a period of 10 years which aimed at delaying the spread of the disease and at developing and applying practical control measures. During the two years the program has been under way, good progress has been made in carrying out such measures as were considered worth while and in developing suitable control practices.

During 1925 two important developments in the spread of the rust were noted. First, western white pines were found to be infected at Nelson, British Columbia. This pine infection resulted from Ribes infection found at the point in 1923, and is significant in that it constitutes a focus from which Ribes infecting spores can be disseminated over long distances, thus greatly increasing the risk of initial infection of Ribes in northern Idaho. Second, the disease was found in the coast region of northwestern Oregon at Pacific City, Wheeler, and Knappa. This spread undoubtedly denotes the presence of infected pines in the Puget Sound region of Washington some distance south of the Canadian border. It constitutes a direct thrust of the disease toward the sugar-pine regions of southwestern Oregon and California.

Blister-Rust Control in the East

Steady progress in blister-rust control in the East has been made since the beginning of the control program in 1922. The developmental work prior to 1921 resulted in 1,036,903 acres of land being cleared of 14,491,503 Ribes, of which 91,718 were cultivated bushes. At the same time, the average per acre cost of eradication was reduced from 72 to 18 cents. From the beginning of the control program in 1922, a total of 29,988,089 Ribes, of which 204,451 were cultivated bushes, have been eradicated from 3,217,140 acres of land at an average cost of 18 cents per acre. Since 1918 a total of 44,479,592 Ribes of which 296,169 were cultivated bushes, have been destroyed on 4,254,043 acres of land.

The majority of owners of cultivated Ribes destroyed their bushes without compensation. During 1925, 59,458 cultivated bushes were uprooted, yet the State had to pay for only 2.2 per cent or 1,300 plants. A total of \$514.55 was paid in compensation for cultivated Ribes to 49 owners. During the four years the program has been under way the cooperating States, towns, and individuals have made available a total of \$723,451.02 for cooperative control work.

The blister-rust situation in the Middle Atlantic and Lake States differs materially from that in New England and New York. The southward advance of the disease into northern New Jersey and northeastern Pennsylvania has been comparatively slow. The difference in the behavior of the disease in this region is probably due to the influence of host associations, and perhaps other factors not definitely known at present. Wild Ribes are moderately abundant, but the pine host is so scattered that field conditions are unfavorable for the rapid spread of the disease. Cooperative scouting in New Jersey during 1925 resulted in the finding of infected cultivated black currants in Monmouth, Passaic, Warren, and Sussex Counties. Similar scouting in Pennsylvania showed the rust present in Wayne County at Callicoon, Rileyville, and Damascus, where it had occurred in former years, and at Laurella, a new location. In two instances the disease was on cultivated black currants, in the third on pines and black currants and in the fourth on pines and wild gooseberries. The southward spread of the rust is being carefully watched, and steps will be taken, in cooperation with the States concerned, to secure the application of control measures to valuable pine stands as the need arises.

Report of the Secretary of Agriculture
for 1926, dated November 1, 1926.

BLISTER RUST TALKS AT SUMMER CAMPS WORTH WHILE

Blister Rust Agents are not stationed very close together and thus when one agent hears of the work of another it shows that blister rust educational work is certainly worth while. The writer met a young man in Providence recently who had attended a Y. M. C. A. camp in Connecticut this summer and having heard Agent Miles give a field talk, had a good understanding of the rust. He related enough about the work to show that some talks are bound to leave an impression.

A. W. Hurford, R. I.

BLISTER RUST REPORTED FROM MICHIGAN

While the blister rust has been reported from Oakland and Kent Counties in Michigan for a number of years past, no new center of infection has been located until this fall when Mr. David J. Stouffer, Blister Rust Agent, made the discovery of the rust in Macomb County, in the latter part of August. Macomb County is the next county east of Oakland, where the disease has been present since about 1911, and it is very likely that it has spread to Macomb from the early centers near Birmingham and Pontiac.

Mr. Stouffer writing about the infection stated that, "Both stages were present on this particular gooseberry that I inspected. The telial stage was well advanced but the 'spore horns' were hard and dry. Some of the uredinal spore stage was present, too. Mr. Nelson of the Botany Department of the College confirmed my identification."

CUMBERLAND COUNTY (ME.) BLISTER RUST WORKERS HAVE OUTING

The white pine blister rust workers of Cumberland County held their third annual field day at Charles Haley's grove and camp, Ingalls Pond, South Bridgton, Sunday. In spite of the weather, Mr. and Mrs. Haley made everyone comfortable with a roaring fire in the fireplace of their camp. Prizes for the sporting events were awarded as follows: Horseshoe pitching champions: Arthur Petersen and Norman Hamlin; peanut race, Mrs. D. S. Curtis; potato race, men Charles Haley; potato race, women, Gladys Haley; throwing contest, Norman Hamlin; best rifle shot, men, Leon Murch; best rifle shot, women, Gladys Haley; champion tree estimator, Frank Mitchell. Arthur Peterson was awarded the prize for being the most efficient scout. The events of the day were brought to a close with a marsh-mallow roast.

Guests from outside the County were Agent D. S. Curtis and Mrs. Curtis of Oxford County, Agent G. H. Kimball and Mrs. Kimball, and Scout F. C. Yeaton and Mrs. Yeaton of Androscoggin County.

Others present were John Sauer, Mr. and Mrs. Arthur Kenison and Leon Murch of Baldwin, Mr. and Mrs. Charles Haley, Miss Gladys Haley and Roy Nason of Sebago, Mr. and Mrs. Norman Hamlin of Otisfield, Mr. and Mrs. Arthur Petersen, June Petersen of Casco, Miss Maude Symonds, Gardner Files, John Files of Raymond, Mr. and Mrs. Frank Mitchell, Mrs. E. C. Warren, Miss Flora Warren, J. H. Cotton, Dana Cotton of Gorham, Mr. and Mrs. Harry Cole, Miss Dorothea Cole, Lewis Hogan and Miss Kenney of Richville, Manley R. Adams of Freeport and Mr. and Mrs. S. D. Conner of Portland.

Portland (Me.) Press Herald. 8/30/27

Note:-The Washington Office was much pleased at receiving a 'brand-new' clay pipe, dressed up with a red ribbon, and holding somewhat less than a quart of good old Virginia tobacco. The pipe was sent in by the Cumberland County Blister Rust workers as a memento of their outing and was appropriately labeled Blister Rust 8/28/27.

R. G. P.

JERRY DOWER DESCENDS PERPENDICULAR CLIFF ON STATE ROAD
NEAR CANAAN, CONN.

Not All the Mountain Climbing and Cliff Scaling
Done in the Alps.

That not all the mountain climbing and cliff scaling is done in the Alps can be testified to by Jimmie Place's crew of Blister Rust Boys. They are now working the lands of Miss Edith Scoville in Salisbury. Overlooking the state road between Salisbury and Canaan is "Turnip Top" Hill and on its south face some high and rather formidable cliffs. During the work, it was found that half way up the cliff here was a narrow shelf of rock and growing on this shelf in Alpine edelweiss fashion were some wild gooseberry bushes.

It was impossible to scale the cliff to the shelf, so using their tow rope from the State truck, Jerry Dower a local Canaan boy, descended the perpendicular face of the cliff while the other men held the rope. Down he went twenty feet or more until he reached the shelf. Then he found that instead of the few bushes they had seen from below that he had nearly two dozen bushes to pull.

The cliff rears itself high above the beautiful pine on the Scoville estate and from there the spores from the blister rust could easily spread and start infection in the very tops of the great pines. It was all in the day's work for the boys, and whether in a swamp or climbing a tree to get out a gooseberry bush, they are steadily working to save the pines, young and old.

Connecticut Western News.
No. Canaan, Conn. Aug. 23, 1927.

EUROPEAN BLACK CURRANTS BECOMING SCARCE IN BROCKWAY'S DISTRICT IN
MASSACHUSETTS, 'DOWN PLYMOUTH WAY'.

Agent Brockway reports from southeastern Massachusetts, that the residents of his district are complying very willingly with the recent order of the State Department of Agriculture forbidding the further cultivation of the black currant. Several towns in Bristol County have already been canvassed for black currants and a surprisingly small number of plants have been found. It is interesting to note, however, that all specimens located have been heavily infected with blister rust.

Mr. Brockway also reports that in the town of Norton in Bristol County wild Ribes and escaped plants are practically unknown and according to many of the residents of the town most of the cultivated Ribes were removed in 1917. The absence of escaped bushes is evidence of the wisdom of eradicating cultivated Ribes to prevent the distribution of seed by birds.

Would that there were more towns like Norton!

CONNECTICUT NEWS

Eradication Season Closes in Connecticut

September 24 will mark the close of the eradication season in Connecticut. The state camp in Norfolk was discontinued September 10 and the Canaan camp will close September 24. Individual cooperation will continue until the scarcity of Ribes leaves makes further eradication impractical.

An unusual amount of rain during the latter part of the season slowed up the work somewhat but on the whole it looks like a pretty good year.

At the close of our eradication season we are again faced with the problem of securing winter employment for men that we want to use next spring. Corn borer control offers some prospect but that will take care of only a few men for a month or so, in the late fall and early spring one or two men go on forest patrol work. We have investigated several other possibilities with poor results. Any suggestions from other states on the subject would be welcome.

Insects Defoliating Ribes

Early in August it appeared as if operations on an eradication job of considerable extent in Salisbury would have to be suspended for the season because of scarcity of leaves on the Ribes bushes. However, an examination of the area showed that the defoliation was due to insect work, and was fortunately very limited in extent. At the present time it looks as if the leaves would remain on the wild Ribes in the woods later than usual, although some of the more exposed bushes are losing their leaves rapidly.

Reeradication Survey in Colebrook

Considerable interest has been shown in a survey that is being made in Colebrook to determine Ribes and pine conditions. The survey shows comparatively little reeradication necessary, after a lapse of 6 years or more. Some of the larger pine owners in Colebrook have contributed \$500.00 to carry on the necessary reeradication work next year.

Ribes Concentrations Difficult to Eradicate.

Our experience this season has demonstrated that it is impossible to secure satisfactory eradication at a reasonable cost in a single season in certain "Ribes concentrations". Several moist areas in Norfolk and Salisbury, where currants and gooseberry bushes are numerous and where other vegetation is particularly rank were worked two and three times with a good crew, yet the checks showed unsatisfactory results. It is planned to rework these areas in the early spring and it is expected that a good job can be done at a reasonable cost at that time.

September 14, 1927.

J. E. Riley, Jr., Conn.

NOTES ON NEW YORK FAIRS

The Fair Season is here and blister rust eradication gives place to demonstrations. This work started in August in New York. "Major" Woodward in his itinerary report for August writes:

"Started Leader R. W. Cross trimming booth for blister rust and forestry demonstration.

"Placed demonstration at fair.

"Visited fair and attended demonstration, besides carrying on other routine work, such as inspection of properties for Ribes.

"Collecting specimens, shipped some to Mr. Stevens at Lowville for use at demonstration at Lewis County fair.

"Awaited arrival of eradication assistant R. Paige of Washington County to get material for use at blister rust demonstration at Washington County fair."

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Agent Baker Has Had Similar Experience in Fair Work

"Spent part of day with Agent Bowlby at the Hudson Falls fair at the blister rust demonstration.

"Collected blister rust and Ribes specimens for fair demonstration.

"Got material at Hudson Falls from Agent Bowlby for fair exhibit at Ballston. Worked on posters and other materials for the fair, at headquarters.

"Took load demonstration material to Ballston fair.

"At Ballston fair part of the day, after visiting four of the foremen."

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BLISTER RUST DEMONSTRATION AT BURRILLVILLE, R. I., DRAWS BIG CROWD

A blister rust fair demonstration as part of a state forestry protection exhibit was set up inside the entrance of The Exhibit hall, Providence County Fair, in the town of Burrillville, for the fair period September 7, 8, 9, and 10. Approximately 10,000 people entered the exhibit hall during the entire period. The demonstration included panels, pine infections, and the state rules and regulations in regard to blister rust control, printed in white on attractive green placards. The agent has found that generally, when people understand the rules and regulations they are much more apt to cooperate. However so few have a proper understanding of the rules that further educational work of this nature is very necessary, the placards being a start in this direction.

A. W. Hurford, R. I.

1927 CONTROL WORK IN NEW HAMPSHIRE

New Hampshire towns and cities, to the number of 77, made available for blister rust control during the present season the sum of \$28,800. In addition to this approximately 40 persons put up \$3,200. for work on their own land. By the time the Blister Rust News goes to press all eradication work for the season will have been completed. Owing to the fact that reports from the several districts had not all been received at the Concord office at the time this article was written, it is impossible to report the total expenditures, acreage, and bushes destroyed.

Control work, during the past season, has been greatly interrupted by wet weather. During the month of August, particularly, there was an unusually heavy rainfall. According to the United States Weather Bureau the rainfall for southern New England was some two inches above normal and August ranks as one of the wettest months for a period of more than fifty years. To blister rust control workers in New Hampshire this statement by the weather bureau authorities appeared to be correct, for there were many periods in which the crews were unable to work more than one-half time.

Defoliation of wild Ribes took place much earlier this year than for a number of seasons and as a consequence some control work has had to be abandoned. It is likely that the extreme inclemency of the weather and the heavy infection of Ribes may be responsible for this condition of the bushes. The State Leader hopes to submit in the next issue of the News Letter a more complete statement covering control work in New Hampshire.

L. E. Newnan - New Hampshire.

BLISTER RUST CONTROL PLAYS PROMINENT PART IN FOREST PROTECTION

The writer at the request of Agriculture Commissioner Lewis spoke on the evening of July 27, before the Quidnesset Grange, East Greenwich, on Forestry in Rhode Island and on Blister Rust as part of forest protection. The entire evening was given over to a Forestry Night Program.

The Rhode Island Forestry Association held their summer meeting August 31, on the Goddard Estate, East Greenwich. A wagon ride through a five hundred acre plantation of different tree species planted over a number of years, partly on shifting sands, made a very interesting field trip. Mr. Herbert Wheeler, lecturer of U. S. Forest Service spoke before the group on forest protection and mentioning blister rust control as real active protection, praised the control work in general.

A. W. Hurford, R. I.

SUMMARY OF BLISTER RUST CONTROL IN MASSACHUSETTS FOR 1927.

Intensive work in the eradication of Ribes in Massachusetts will be closed on September 15, one state inspector being retained in each of the administrative districts until the end of the month, to assist the agents in completing a number of miscellaneous projects. From present indications, the 1927 field season will be recorded as one of the most successful during the present campaign. Field records compiled to September 1 show "in round numbers" that more than 1,500 property owners participated in control work on over 250,000 acres of pine producing land. On this area more than 650,000 Ribes were found, the owner contributing the equivalent of \$7,500 of the total cost of eradication. The removal of upwards of 30,000 cultivated Ribes has required the exercise of unusual tact and patience but the work has been accomplished without serious "conflict". Several new areas of serious pine infection have been located during the season and the disease on pine has been located in a few towns in which it has never been found before. Infection on Ribes has been quite general.

C. C. Perry, Massachusetts.

BLISTER RUST SUMMARY FOR BERKSHIRE COUNTY, MASS.

W. J. Endersbee, Blister Rust Control Agent for Berkshire County, submits the following for May and June, 1927 which shows that effective work can be done and at a very low cost per acre:

	May	June	Total
No. Acres Examined	2,966	20,073	23,039
No. Acres Pine Protected	1,124	5,113	6,237
No. Wild Currant and Gooseberry bushes Destroyed	30,772	48,932	79,704
Total Cost,	\$521.93	\$1,050.16	\$1,572.09
Cost per Acre,			\$.068

The Berkshire Farmers' Bulletin
August 1927.

Maine is gradually cleaning up the white pine blister rust, which was threatening to make this anything but a Pine Tree State.

Portland Evening Express. 8/15/27.

BLISTER RUST CONTROL SUMMARY FOR MAINE

"Due to the fact that some of the county agents are carrying on Ribes eradication at present, I was delayed in getting figures from them regarding the season's work. However, am sending what we have, subject to change later on. Figures for September are estimates, but are not too far out of the way for general purposes."

W. O. Frost.

Eradication in Maine will not be completed in some counties until the latter part of September. This is considerably later than expected, but as we had such unfavorable weather in July and August we may thank our lucky stars that we have done as well as we have. September has brought fine weather, enabling us to finish after all, although a little more difficulty is found in the eradication of Ribes as their leaves are falling very fast.

As near as we can estimate this year's figures compare very favorably with our best past years' work, in fact this may be the banner year.

The estimated totals for the State are:- Thirteen hundred pine owners and 51 towns and cities cooperated with the State and federal government in the removal of over 2 1/2 millions of wild Ribes, and 8,000 cultivated Ribes from over 30,000 acres of pine lands. The pine owners spending about \$8800.00, the towns about \$8600.00, a total cost to them of \$17,400.00 and a per acre cost of about 58 cents.

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State Leader Frost and County Agent Curtis are staging a blister rust demonstration at the Farmington fair, Franklin County, September 20-21-22. Blister rust activities are to be conducted in this county in 1928.

W. O. Frost - Maine.

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Be pleasant, keep in touch with your office if you want your office to keep in touch with you.

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Ideas are the product of thought; use your brains.

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Genius is eternal patience.

PINE OWNERS VISIT BOWDITCH WOODLOT
AT TAMWORTH, N. H.

An interested group of woodlot owners, accompanied by the Blister Rust Agent, gathered in the Bowditch woodlot in Tamworth August 10 to make a tour through different-aged stands of white pine, both planted and naturally seeded. This trip was under the direction of the Assistant State Forester, Mr. Hale.

The party, numbering 32, met on the shore of Chocorua Lake and first visited several acres of 40-year old white pine, which was thinned and pruned about eight years ago. The trees were pruned to a height of about 20 feet. However, they are still too thick and need further thinning, as they are growing very slowly.

We continued to a roadside reservation now owned by The Society for the Protection of New Hampshire Forests. This reservation extends for one-half mile on each side of the State road near Chocorua Lake and adds much to the beauty of the drive.

The last place visited, a 50-acre plantation, was the most interesting. The land was originally in white pine, which was cut and the area allowed to grow to hardwood for several years. About five years ago a section was cleared and planted to white pine; this now supports a good plantation. During the last two years about 40 additional acres have been cleared, the brush burned, and the area planted to white pine. This area is going to show some interesting competition between white pine and hardwood.

While on the tour, skunk currants were found at various places by the Blister Rust Agent and shown to the group. The woodlot owners were also shown white pine infected with blister rust. Many questions were asked about the rust and its habits, the white pine weevil, and ant injury to white pine.

Mr. Bowditch was surprised to find so much infection and agreed to have the Ribes removed from his land. The meeting was very successful and of the kind that benefits the community.

S. H. Boomer - New Hampshire.

Notes from Lincoln Co. Me.

The film, "The Pines" has been shown in 7 towns in Lincoln County. It has caused much interest as well as giving people an idea of the way in which the work is conducted. It is a wonderful help from the educational standpoint. In my interviewing it has been mentioned many times and saves much time and lots of explaining.

Mr. F. E. Poland of 22 Oak Terrace, Malden Mass., who conducts the Medomak Boys Camp at Washington, Maine, offered 10 cents per bush for all Ribes found on the camp grounds. In less than 24 hours he had paid out \$20.00 for the 200 bushes found. Luckily they were all gooseberries and not skunk currants.

J. White - Maine.

BLISTER RUST CONTROL IN STURBRIDGE, MASS.

After two years of effort, the end of operations in Sturbridge is in sight. Early next spring will see the completion of the 900 acres remaining to be eradicated.

This has been a long job, due to the abundance of pine and currants and gooseberries. Owners of pine and potential pine land have reason to feel optimistic because of the splendid reproduction taking place throughout the town. If the present owners exercise some care, the coming generation will see these beautiful hills covered with a verdant growth of pine and other forest trees. Fire as well as disease must be kept out.

Sturbridge abounds in natural scenery. Being blessed with clear sparkling lakes and ponds with tree-clad hills of considerable height rising from their shores, affording a view second to none in Worcester County.

The time and money spent by the Commonwealth in eradicating the Ribes is well spent. We hope that the individual owners will show as much interest in the future as they have during this cooperative period. It will be necessary for them to examine their land for Ribes every few years.

At the present time there is blister rust in the town. The earliest infection found originated in 1917. There are two areas quite badly infected, infection running as high as 70%. In the eradicated area no new infections are showing up, this due to the absence of the Ribes. Needless to say that the disease has made some headway in the 9 years that it has been working on the pine and Ribes. Ribes were so abundant it was impossible to expect anything else. The disease is widely scattered, few stands escaping. But except on the two areas mentioned, no extensive damage has been done.

Following is a summary of the eradication work of 1925 and 1926:

	1925	1926
Acres Eradicated	20,337	1,353
Currants and Gooseberries removed	144,030	68,066
Cost		\$3,333.39
		\$618.65

The Worcester County (Mass.) Farmer, 1927.

CEDAR RUST CONTROL PAVES THE WAY FOR RIBES ERADICATION

Blister Rust pine infections in Rhode Island are few and far between as far as is known at present, due to past control work and various other reasons. Thus in explaining blister rust to farm owners throughout the state, the agent has found that since many farmers have some cedar rust on their apple trees which they often mention, the agent is able to advise the cutting down of all cedars near apple orchards, and then with the farmer very willing to accept this method of control, the subject of blister rust is brought up and the need for eradication of Ribes is much better understood and accepted.

A. W. Hurford, R. I.

MEET PRINCE PINE

(Continued from August issue)

Prince Pine With the Inspector

Prince Pine, the young tree in Mr. Farmer's plantation, was eager for the noon hour to arrive when the men in the crew would return to eat their lunch. Since yesterday morning they had been running strips back and forth across the old pasture which was now nearly gridironed. He could see the white paper lines extending parallel to each other and marking the strips where the crew had worked. Nearly every one of the scattered clumps of brush or individual young hardwood trees in this area now held a gooseberry or currant bush, with its heels up to dry in the sun and wind. In the swampy area at the far end of the pasture the young hardwoods were overlaid with uprooted bushes because currants and gooseberries were especially abundant in that region. The men had pulled over 5,000 yesterday and had spent most of their time in the swamp area. Prince was eager to hear how many they destroyed this morning.

What Happens at the Noon Hour

Prince had another reason for wanting the noon hour to arrive. Dr. Rust would eat his lunch with the crew and Prince was very fond of the doctor who told such interesting stories about the disease. The doctor was already with the crew. He came about eleven o'clock and followed along the old stone wall looking for gooseberries that the men might have missed. "I found only these two small bushes," he told Prince as he came up; "Those men are doing very good work." Leaving Prince and the wall he followed one of the strips leading to the swamp area where the crew was at work.

It was soon after the dinner gong at a nearby farm house had sounded that the crew joined Prince for the midday lunch. "We destroyed over 4,000 this forenoon." Mr. Farmer told Prince as they came up. "They pulled 800 on that last strip and I could find only four behind them," Dr. Rust added. "That is better than 99%," commented Mr. Gardner proudly. "We are just about perfect," drawled Bill, the hired man. Freddie Farmer was too hungry to comment and had already devoured one of his sandwiches. The others too began eating their lunches without further delay.

More About the Neighbors

While they ate, Dr. Rust inquired who owned the woodland across the road from Mr. Farmer's house. "That belongs to me," replied Mr. Farmer. "It is all brush land except the narrow fringe of old hardwoods near the road." "I wish I could sell that lot," he added, "because it is no good to me." "How long since you have been in the lot?" asked the doctor. "I do not know, it is several years," replied Mr. Farmer. "I went through part of it this morning and saw some fine young pine growth," the doctor went on. "Nearly everywhere there is pine coming up through the hardwoods." "Much of it needs help to survive because the hardwoods are crowding the pines and will probably kill many if nothing is done to liberate them." "I did not know there were any pines in that lot," said Mr. Farmer amazed. "Well there are and there is blister rust too,"

continued Dr. Rust. "I could not find out at first where the rust came from because I could not find any currants or gooseberries." "Later, however, I found plenty of reason in your garden." "Will cultivated currants spread the rust too"? asked Mr. Farmer. "I have only a dozen red and half as many black currants in the garden," he half apologized.

Will Cultivated Currants Spread Rust?

"The cultivated bushes are certainly a grave danger, especially the black currants," replied Dr. Rust. "Black currants in cultivation," he went on, "are the worst carriers of the rust." "This kind is not only more easily diseased but produces spores of greater vitality and spreads them in greater profusion and to longer distances than any other variety." He was emphatic in condemning them and made it plain that this species should be eliminated for miles around pine stands. "In a state like this where pine grows everywhere, the black currant should be banished and kept out." He concluded by calling attention to an order of the State Department of Agriculture, effective April 1, 1927, which makes it unlawful for any person to possess, propagate or sell black currants within the Commonwealth of Massachusetts. "If that is the case said Mr. Farmer, "I shall use the grub hoe on all those cultivated bushes this evening." "You had better use a horse and small chain if you have them handy," advised Dr. Rust as the men arose to return to work.

W. J. Endersbee,
The Berkshire Farmers' Bulletin.

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SCOUTING FOR THE DISEASE IN WASHINGTON

Mr. Putnam has three crews scouting for the disease on the coast region of Washington. The disease has been found in the past to be generally distributed on Ribes, especially the cultivated black currant in this region. The object of the scouting at this time is to determine the amount of infection on white pine as well as the intensification on the Ribes. One crew is working in the Olympic Peninsula, one on the northern part of Snoqualmie National Forest and one on the southern half of this forest. This work was started during the last few days of July and will be continued during August and September. Thus far, pine infection has been found in only one locality, that is, near Silverton in a plantation of the eastern white pine, Pinus strobus. Indications are that this infection took place during the heavy wave of infection on Ribes in 1921 and 1922.

Mr. Putnam reports that "up the Stillaquamish are more Ribes bracteosum (the wild black currant of the Coast) than I have ever seen before: All along the main river and along the smaller streams are enormous areas of solid R. bracteosum varying in width, but often 200 feet or more wide. The bushes are young trees reaching up often 25 feet in height."

Western Blister Rust News Letter.
August, 1927.

P E R S O N A L S

S. D. Conner had blister rust demonstration at the Cumberland County Fair in Gorham, Me., August 30 and 31.

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Mr. J. D. Scofield who has been working this summer in the Boston Office has recently resigned. He returned to Washington on September 9 and was a visitor in the Office. Scofield looks as tall and lean as ever. He plans to enter the freshmen class at George Washington University this month.

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Dr. J. F. Martin left Washington, D. C., on a 2 week's field trip in the Northeastern States on September 1.

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Mrs. E. Marvin Dowdy, Property Clerk, (formerly Miss Myrtle L. Cummings) resigned September 6. She joins her husband Mr. E. M. Dowdy at Moscow, Idaho, where he is engaged in ranching. Her address will be R #1, Moscow, Idaho.

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Mr. John H. Brubaker, Accounting Clerk, resigned from his position with the Washington Office on September 19. He will go to Oklahoma City to hang out his shingle as a full-fledged attorney-at-law.

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Miss Beatrice L. McCormick, assistant clerk stenographer in Mr. H. E. Allanson's office, was transferred to the Blister Rust Control office at Spokane, Washington. Her transfer was effective September 1.

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Mr. Walter F. Pratt has been appointed agent with headquarters at Albany, New York. His appointment was effective August 15.

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Miss Oma V. Watters, assistant clerk-stenographer in Dr. W. A. Taylor's office was transferred to the Washington Office of Blister Rust Control September 8.

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Mr. H. P. Avery, Chief Clerk Washington Office, spent a week's vacation, August 20-27, at Caledonia Park, Pa.

Mr. Arthur J. Lambert, Blister Rust Control Agent at Augusta, Maine, was married at St. Andrew's Church in Biddeford, Maine, Monday, September 12th, to Miss Eveline Lemieux of Biddeford.

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Miss Maude A. Thompson returned to the Washington office September 8, after an extended field trip through the eastern and Mississippi valley states. She was engaged in work in connection with the blister rust quarantine.

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Mr. John Griffiths, who has been working with Mr. A. E. Fivaz in experimental work in New York, dropped into the Washington office early in September to pay his respects. John spent a few days in the city prior to going to the University of Cincinnati, where he plans to take an engineering course.

Mr. C. S. Herr, Blister Rust Agent at Milford, N. H., had a blister rust demonstration August 10 at the Farm and Business Mans Field Day at Manchester, N.H. Three thousand people were present, 1,500 saw the exhibits and over 200 informal contacts were made.

SUPPLEMENT TO

THE BLISTER RUST NEWS

Vol. 11, No. 9. September, 1927

C O N T E N T S

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Susceptibility of Different Aged
Pine Needles to Blister Rust and Re-
lation Between the Number of Infec-
tions on Pines and the Persistence of
Their Needles.

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SUSCEPTIBILITY OF DIFFERENT AGED PINE NEEDLES TO BLISTER RUST AND RELATION
BETWEEN THE NUMBER OF INFECTIONS ON PINES AND THE PERSISTENCE OF THEIR
NEEDLES

By

J. L. Richards,

Relative Susceptibility of Needles of Different Ages

In June, 1920 the writer while engaged in a field study of the spread of the white pine blister rust at Temple, N. H., observed numerous discolored spots resembling blister rust infections as described by Clinton upon the needles of small suppressed pine situated in moist woods near a patch of skunk currant (Ribes glandulosum). The pines bore mature needles upon the annual growths of 1919, 1918, and 1917. (Some of the trees had retained a few needles upon the growths of 1916). Close examination showed that the needle spots had progressed to the same degree of development regardless of the age of the needles upon which they occurred.

No bark cankers as much as a year old were present upon any of the trees within the apparent limits of infections arising from this patch of skunk currant. Spaulding cites Tubeuf, Klebahn, Clinton, etc., as having found numerous cankers in the Pycnial stage within a year after the pines had been exposed to blister rust.* Arguing from analogy, at least some cankers in the pycnial stage should have been present had these Ribes been infected in any season previous to 1919. The absence of normally developed bark cankers such as would have resulted from exposure prior

*Investigations of the White Pine Blister Rust, by Perley Spaulding. Bulletin No. 957 U. S. D. A. February 6, 1922, p. 24 et seq. (References to Clinton's publication).

to 1919 and the similarity in the development of the fungus on the needles of the annual growths from 1917 to 1919 inclusive, points conclusively to the fact that all the needle spot infections found resulted from exposure during 1919.

All of the needles on the different annual growths of two of these trees were collected and carefully examined for infection. All infected specimens were sent to Dr. Clinton's laboratory at New Haven, Connecticut for identification. Critical examinations were made by Dr. Florence A. McCormick, which confirmed the writer's identifications. The facts shown by this study are presented in the following table:

Table I

Density of Spot Infections on Needles, by Annual Growth

Annual growths	1916	1917	1918	1919	Total
Number of needles	2	2,519	3,618	4,612	10,751
Number of needles infected	0	130	131	40	301
Per cent of needles infected	0	5.16	3.62	0.86	2.80

In November, 1920 a small pine about 6 years old, growing in the midst of skunk currant in a small opening among spruce at Temple, W. H., was found to have numerous blister rust infections upon the needles. The development of rust lesions in the immediate vicinity indicated that pine infection had taken place during the seasons of 1918, 1919, and 1920. This tree was carefully packed and shipped to Dr. Clinton's laboratory for examination. The results of his examination are given in Table II.

TABLE II

Infection Spots on Needles, by Age of Infection and by Age of Needles

Age of leaves	Number leaves healthy	Number leaves infected	Per cent leaves infected	*Age, location and number of spots												Total infected spots						
				1920 spots only						1918 spots only										Both 1920 and 1919 spots		
				Top	Center	Base	Total	Top	Center	Base	Total	Top	Center	Base	Total	Top	Center	Base	Total			
1920	843	79	9	61	21	2	84	0	0	0	0	0	0	0	0	0	61	21	2	84		
1919	182	170	48	52	26	8	86	69	23	4	96	0	0	0	31	10	2	43	152	59	14	225
1918	52	36	53	6	15	7	28	8	20	3	31	7	1	1	-	-	-	-	21	36	11	68
1917	0	2	100	-	-	-	-	-	-	-	-	2	0	0	-	-	-	-	2	0	0	2
Leaves dropped of	20	19	49	3	1	0	4	8	5	3	16	1	2	1	-	-	-	-	12	8	4	24
Grand totals	1077	306	21	122	63	17	202	85	48	10	143	10	3	2	15	31	10	2	248	124	31	403

*Note: Date denotes year leaves formed or year infection took place.

In Table III the data in Table II is rearranged to show the average number of infection spots per needle.

Table III

Average Number of Different Aged Infections for Average Needle of Different Ages

Year (age) of needles	Year (age) of needle infection		
	1920	1919	1918
1920	.091	..	..
1919	.301	.338	..
1918	.412	.456	.132
1917	..	..	1.000

The consistent increase in the average number of infections per needle as shown in Table III, again indicates clearly that the susceptibility of these pine needles increased as the needles became older.

Relation Between the Number of Infections on Pines and the Persistence of their needles

In the course of extensive studies of the spread of the blister rust at Temple, N. H., records were kept of the ages of the oldest needles retained upon each of the trees examined. During the period in which this characteristic of the trees was recorded, 4,178 trees of all sizes

and in a variety of situations were examined. The diseased trees had become infected during the period from 1912 to 1919. These records are compiled in Table IV.

Table IV

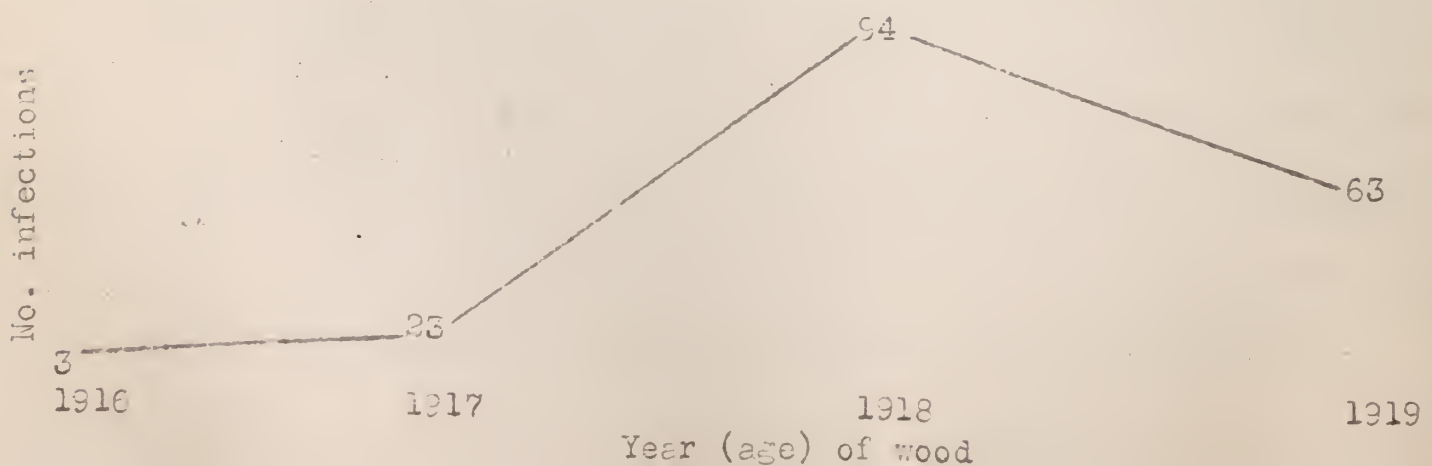
	Maximum number of seasons that needles were retained			Total	Average
	2	3	4		
Number of healthy trees	35	2,775	794	3,604	..
Number of infected trees	3	341	230	574	..
Per cent trees infected	7.9	10.9	22.5	..	13.74
Number infections per tree	.079	.252	.568	..	.327
Number infections per infected tree	1.	2.30	2.52	..	2.38

The figures in Table IV make it quite evident that trees which hold a season's growth of needles for several years become more heavily infected with blister rust than trees which hold needles for a shorter period.

Analysis of Table II shows that out of a total of 403 spot infections upon the needles of a small pine, 31 or 7.7 per cent were near the base of the needles, 124 or 30.8 per cent were near the middle of the needles, and 248 or 61.5 per cent were near the tip of the needles. On the other hand, out of 183 infections found to have occurred in 1919 upon the pines around another patch of skunk currant at Temple, N. H., 3 or 1.6 per cent took place upon annual growths the needles of which were in their

fourth growing season, 23 or 12.6 per cent on annual growths with needles in their third growing season, 94 or 51.4 per cent upon growths in their second season, and 63 or 34.4 per cent upon annual growths in their first season. Thus it seems apparent that the effect of the relatively greater susceptibility of the older needles in causing infection of twigs may be materially offset by the fact that most infections take place at some distance from the base of the needles. And, since it may require considerable time for the rust mycelium to grow through the needles to the bark, it is quite probable that many of the older needles are shed before the mycelium becomes established in the bark.

By further analysis of Table IV it is seen that 100 per cent of the 4,178 trees studied held a part of their needles through the second growing season, 99 per cent held a part of their needles through the third growing season and 25 per cent held part of their needles through the fourth growing season. The eastern white pine (Pinus strobus) under average forest site conditions in the Northeastern States begins to shed needles of a particular year after the end of the second season and the majority (probably 35 per cent or more) drop by autumn of the third season. These facts explain the following curve made by charting the 183 contemporaneous infections of 1919 origin. This curve shows that the largest number of cankers resulted from infections which occurred on needles of the second season.



SUMMARY

1. The relative susceptibility of pine needles to blister rust infection increases with the age of the needles.
2. Trees which retain live needles for several seasons become more infected with blister rust than trees on which needles persist for a shorter period.
3. The effect of the higher susceptibility of older needles in causing blister rust infection on pines is counterbalanced in a considerable measure by the rapid shedding of the needles after the second season.
4. On the area studied needles exposed during the second season were responsible for producing the highest per cent of blister rust lesions on the trees.

J. L. Richards

Office of Blister Rust Control,

Bureau of Plant Industry.

December 1, 1923.

Criticisms of Mr. J. L. Richards' paper
on

"SUSCEPTIBILITY OF DIFFERENT AGED PINE NEEDLES
TO BLISTER RUST AND RELATION BETWEEN THE NUMBER OF
INFECTIONS ON PINES AND THE PERSISTENCE OF THEIR
NEEDLES"

by

Members of Office of Forest Pathology

with comments by

J. L. Richards

G. F. Gravatt:

(1) A number of points I would question are covered by Perley Spaulding's comments on paper. The study presupposes a previous study in which method of determining age of needle spots has been worked out. I don't remember any such study.

See Clinton's notes re Temple, 1920*. J. L. R.

(2) The determination of needle spots macroscopically is very uncertain, as shown by sections made at laboratory by Minnie W. Taylor for Richards and other workers. Cause of other yellow spots on needles is unknown. Do these unknown yellow spots occur in greater abundance on older needles? Unless on sections each spot, what is effect on percentages, etc., of these undetermined spots?

Table II is based on examinations by Clinton and McCormick. J. L. R.

(3) A study is needed on needle spots, following them through from time they are first noted, percent resulting in twig infection, effect on life of needle, rate of increase in size, time to produce twig infections, etc. Simply following up yellow spots at greenhouse would give some information.

For greenhouse conditions only. Growth varies with different site and type conditions in nature. Difference year to year sufficient to be recognized by hand lens. *See Clinton's notes re Temple, 1920. J. L. R.

* See footnote on last page of criticisms.

G. G. Hahn:

(1) Page 242 line 11 - "Similarity in the development of the fungus Be more specific. In what characteristics did these spots agree? Were they uniform throughout?

Size and color uniform. J. L. R.

(2) Page 242 paragraph 2 - "Critical examination". Do you mean from the standpoint of separating spots caused by white pine blister rust from those caused by other sources of discoloration? Isn't this impossible macroscopically without microscopic determination.

Dr. McCormick presumably sectioned the spots. Macroscopic identification not impossible. Microscopic examination may fail to find characteristics. J. L. R.

(3) Table, page 243. How do you determine age of spots? It seems to me you will need to determine this point beyond a doubt before you can calculate the exact period of pine needle infection.

Age of needle spots cannot be determined to the nearest month but can be to nearest year which is sufficient for purposes of paper. *See Clinton's notes on needle spots from Temple, November 1920. J.L.R.

Carl Hartley:

(1) In view of the fact that some of the needle spots submitted by Mr. Richards to Miss Taylor for examination were found not to be blister rust infections, the question immediately arises as to how thorough was the examination of the 300 infected needles mentioned in Table I and the 236 mentioned in Table II. Were all of these needles microscopically examined, or were a sufficient number taken at random for examination to make a representative sample, or did Miss McCormick attempt to judge mainly from macroscopic appearance?

All examined by either Clinton or McCormick - ask them. J. L. R.

(2) For tables II and III the question at once arises - how reliable is the classification of the spots according to the year of infection. If the infections of 1918, 1919 and 1920 differ very much from each other in degree of development, and there was no over-lapping between the 3 degrees, the results are very much more reliable, of course, than if the difference between the 3 ages of infection is less distinct. A statement on this point, or measurement data for different ages of lesions, if such are available, would very much strengthen the paper.

* See footnote on last page of criticisms.

Carl Hartley (Continued)

Did Clinton, Miss McCormick or Richards do the classification of the needles according to year infected?

Clinton and McCormick. J. L. R.

(3) Table II and Table III do not entirely agree. For the 1919 leaves, using the data in Table II, I find .244 1920 spots per leaf, and .273 1919 spots per leaf, instead of the .301 and .338 shown in Table III,

$\frac{244}{273} = \text{approximately } \frac{301}{338}$

J. L. R.

(4) Table IV is decidedly interesting. I am not sure that the significance of the difference between the trees with different needle retention is absolutely established by the evidence. The number of trees in the two-year retention class is obviously so small that the chance for purely accidental variation is large. The conclusion seems to me must rest on the difference between trees with three-year retention and those with four-year retention. There does appear to be a very considerable association here between the number of seasons retention and the amount of infection. I would be interested to know the conclusion that would be reached by someone qualified to determine and interpret coefficients of association.

(5) Assuming the association mentioned above as significant, the question would still arise whether or not the relation between the length of retention and the amount of disease was a direct one, or was simply apparent. In other words, whether, for example, the number of years retention was largely influenced by the dominance of the trees; if this were the case then, of course, the greater amount of infection in the trees with longest retention might in reality be a relation between the dominance and amount of infection rather than between ^{the} length of retention and infection. The amount of association between length of retention and dominance would, I should think, have to be determined in order to settle this point. The association between dominance and high infection has, I believe, already been determined.

Longest retention occurs in moist site and low illumination irrespective of size of tree, that is on suppressed trees and suppressed parts of dominant trees. J. L. R.

(6) The graph at the bottom of page 6 needs the same sort of support that is needed for Tables II and III; a statement, and if possible, some evidence, of the reliability of the conclusion that all of the 188 infections occurred in 1919.

(7) To an outsider the conclusions in the paper appear perhaps justified, but I believe that the evidence would be very much strengthened if more data were given on the points noted above.

Correct. J. L. R.

Annie E. Rathbun-Gravatt:

(1) Page 241-line 7 - Sentence not clear. Weren't 1920 needles present?

Yes, but it was June and telia had hardly formed. J. L. R.

(2) Page 241-last paragraph - Don't think writer is justified in making statement that all infections took place in 1919. Was any of bark sectioned to find out whether there was mycelium present in the twigs? This might have been present even if not producing pycnia.

(3) Did 1917 needles become infected in 1917,; 1918 needles in 1918, etc., according to foot note? "Leaves dropped over" - I presume you mean needles of unknown age. How did you know the age of spots on these needles? How on the other needles? Was size and color the index?

Size and color was index. *Read Clinton's notes of 1920 re age of needle spots. J. L. R.

Perley Spaulding:

(1) Page 1, paragraph 1, line 9 - "had progressed to the same degree of development ----". Does this mean same size or what? If size why not say so?

Size and color. J. L. R.

(2) Page 3, Table II - Age of spots - how determined? I note in your "*Note" you have changed "or" to "and". If this is so infection took place the year leaves were formed.

Note applies to both date columns, one at left and other across top. "Or" is right. J. L. R.

(3) Page 5, paragraph 2, line 5 - "infections found to have occurred in 1919" - how determined?

Careful examination in 1920 found few spots on needles. Examination in 1922 found 183 infections (cankers) whose average size corresponded directly to illumination and was greater on 1919 and 1918 wood than on either 1916 and 1917. J. L. R.

* See footnote on last page of criticisms.

Perley Spaulding (continued):.

(4) Page 247, SUMMARY, paragraph 1. Add "up to 2 years of age". This appears to be the conclusion from the data presented.

No, up to 4 years. J. L. R.

* Note: Clinton's notes refer to a 33-page manuscript by Dr. G. P. Clinton dated November 7, 1920, entitled "CRONARTIUM RIBICOLA ON PINUS STROBUS" on file in the Office of Blister Rust Control at Washington, D. C. This paper is an analysis of blister rust material collected by J. L. Richards in Temple, N. H., by S. B. Detwiler and A. B. Brooks in New York, and by G. P. Clinton in New Hampshire and Massachusetts. It contains Table II as given in Mr. Richards' paper.

R. G. P.



BLISTER RUST NEWS



October 1927.

Volume XI

Number 10

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control



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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States.

VOL. 11, No. 10.

October, 1927.

PLANT A BARN

We used to grow on our own hills,
The boards to make our floors and sills,
But now-a-days we bring them on
From Arkansas and Oregon.
Looks like the sons of me and you
Must import wood from Timbuctoo
If they would build a house and stoop,
A cowbarn and a chicken coop.
To right the wrong while yet we can,
Our forestry extension man
Has got a slogan and a plan.
He's pondered long upon the question
And "Plant a Barn" is his suggestion.
If you start little trees today
Your son will see them on the way,
And your son's son may house his hay.
Two acres pine will see him through it,
One and half will likely do it.
Your farm has got some rugged spot
That you could use as well as not.
But let us plant a little more
To build a house, roof, walls and floor,
And make that other needed shack,
A little off and somewhat back--
Although I hope in days a-coming
The farmer folk will all have plumbing.
Oft I am stirred, by thoughts like these,
I'll bend my back, I'll bend my knees,
I'll set a lot of little trees,
I'll crown the hill with noble pine
To help my grandson house his kine,
That he may have upon his barnsite
A better building by a darn site.

Bob Adams
In Syracuse Forestry News Letter.

BLISTER RUST SPREADS IN PENNSYLVANIA

Dr. W. A. McCubbin writes that the results of the examination of the first 1000 reports received from the schools in the blister rust survey of Pennsylvania, shows that 30 out of 47 counties are infected. A total of 4405 collections have been received as the result of the examination of 8330 gardens in 47 counties. One hundred fifty-five schools have sent in specimens of the rust on Ribes from 302 places in 30 counties. The survey through the schools is giving excellent results. Several hundred reports from schools remain to be examined, and it will be several weeks before a complete summary of the results of the survey can be made available.

J.F.M.

TEN-YEAR OLD BLISTER RUST INFECTION
AT BAY RIDGE, IN SCARBORO, MAINE.

On September 22, 1927 Messrs. Frost and Conner made a summary of infection data on a plot at Bay Ridge in the town of Scarborough, Cumberland County, Maine. The plot of one acre which was studied is in a pine stand of approximately 15 acres of the pasture type. There are 366 trees on the plot, the average height being 6 feet. Of these 366 trees, 213 are healthy and 153 have been infected with blister rust. Of the infected trees 59 are already dead, 93 are dying, and one will recover due to shading and killing of the cankered branch.

The following table shows percentage of cankers by year's wood on which they originated.

<u>Year</u>	<u>Percent</u>
1918	2.0
1919	3.8
1920	69.6
1921	4.4
1922	15.1
1923	3.1
1924	2.0

It may be of interest to note that Ribes on this area of 15 acres, of which this one acre plot is a part, were eradicated by the owner and town foreman on July 5, 1927. There were 573 wild gooseberries (R.hirtellum) destroyed, an average of 38 per acre.

O.V.W.

1905 BLISTER RUST INFECTION AT ROWE, MASS.
CAUSED BY A DOZEN CULTIVATED
BLACK CURRANT BUSHES

A brief article appearing in the June issue of the Blister Rust News stated that a small but old and heavily infected area had been located in Rowe, Mass. Messrs. Hodgkins and Doore were assigned to make a study of the area but due to the lack of time some of the details will be found missing for the present at least.

The following meager notes will, however, give one an idea of the general location of the plot and the amount of blister rust infection found. The area is 1480 feet above sea-level and located at a point on Rowe's southern boundary line, one and one-half miles in a westerly direction from the town's southeast corner. An acre plot was laid out and then subdivided for convenience in working.

Infection ran from 60 to 68% per quarter-acre with an average of 63% for the whole. The total number of trees examined was 245. The trees varied in height from ten to sixty feet. Of the thirty-eight trees over 50 feet tall, twenty-one, or 52.2% were found to be infected. It was found that 155 trees were supporting 314 cankers. The largest tree infected with blister rust measured 22 inches D.B.H. There were 25 trees killed by the rust, or 22.5%; 109 stem cankers were located and 115 trees were found to be dying from the rust.

The oldest canker, and only one of these, originated on 1905 wood. The banner year for the rust in this spot was in 1911 with 73 cankers tallied. The number of cankers diminished irregularly to 1917, and in that year only 3 were noted. There were 4 infections tallied for 1918. Infection was caused by a dozen black currant (Ribes nigrum) bushes to the northeast of the plot and within 300 feet of it. These bushes were removed in 1917 and the only cankers that have developed since that date are the four in 1918. There were very few wild ribes in the vicinity at the time of the general eradication during September 1926.

G. S. DOORE, Mass.

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A 17-acre woodlot on a farm near Hollis, N.H., was cut over in 1894. The owner, Mr. Hill, paid the choppers a bonus of \$20 to leave the small growth. Mr. Hill's son has since cut 50,000 board feet of pine from the lot, and two years ago refused an offer of \$2,000 for all trees over 8 inches in diameter. For lumber sawed at a near-by mill and delivered at Nashua the elder Hill collected \$11 and \$9 per thousand. During the winter of 1925 logs piled at the roadside on the lot were sold by the son for \$18 per thousand.

Forest Worker. September, 1927.

A FARMERS AND BUSINESS MENS FIELD DAY
AT MANCHESTER, N. H.

It has always been an avowed fact, that anything which the farmer wanted, the city population or business man certainly did not want. In other words, the spirit of cooperation was usually "conspicuous by its absence". The event which I will describe went a long way toward bettering this feeling in Hillsborough County, New Hampshire. The Hillsboro County Farm Bureau, in cooperation with the Manchester Chamber of Commerce, held August 10, on the campus of St. Anselms College, what was known as a Farmers and Business Mens Field Day.

The program opened in the morning with a mowing contest, which was followed by stock judging, games and races for the boys and girls. In the afternoon there were numerous contests between the farmers and business men, such as a baseball game (which the farmers won), tug of war and pillow fights. This splendid program of sport brought out hundreds of people, since it was a half holiday in the city. The business men wore yellow tags in contrast to the red tags of the farmers.

The gymnasium was well filled with exhibits, showing the various fields of work which the Farm Bureau was doing, including a blister rust demonstration. Approximately 3,000 people were present and about 1,500 saw the exhibits.

It is a pretty safe bet that the majority of the city people present are now in sympathy with the Farm Bureau program, or at least know what it is doing. Needless to say, the Farmers and Business Mens Field Day will be an annual event hereafter.

C. S. Herr - New Hampshire

- - - - -

THE FIRST STATE CONVENTION OF THE ISAAC WALTON LEAGUE
OF AMERICA

The representatives of the various chapters of the Isaac Walton League, met for their first convention at the Sargent Camp, Peterboro, N. H. September 2, 3, and 4.

Their program was largely one of conservation. Major R. Y. Stuart of the U. S. Forest Service, spoke on "Cooperation in Forestry." Their resolution in part was, that all members of the league, "give their assistance to the education of the people of New Hampshire in the appreciation and protection of our natural resources and thereby help make this state the playground of the East."

The various chapters of the Isaac Walton League of America, will become blister rust supporters, if educated, since their motto is "Defenders of Woods, Water and Wild Life."

C. S. Herr - New Hampshire

Editor:-Note to New Hampshire Agents! Here is an opportunity for education along blister rust lines, which may not have occurred to you.

RIBES SCARCE IN A SHEEP-GRAZED WOODLOT

Owner 'Callates' No Ribes Here!

We often have pine owners who claim that Ribes are scarce or even entirely absent from their pine lot, but I had one recently offer to bet that I could not find a 'Ribe' anywhere near his pine. I did not take up his bet, but was tempted to as he swore that he had never pulled one on his eighty acre lot in question. I said "come with me and I'll show you some Ribes". Arriving at the lot, the reason for scarcity was evident enough - the grazing of sheep. It was the first time, however, I was unable to produce at least a few Ribes, even in a sheep pasture. After a half hour of scouting I hadn't found a single bush and the owner said, "He calculated he had the laugh on me." And it looked that way.

Agent Finds Ribes 20 Feet Up.

On the way out, however, I did find one Ribes in the fork of an elm tree, fully twenty feet from the ground, and I'll bet it would not have been there if sheep could climb trees. This surely goes to show that heavy grazing to sheep, over a period of years, means almost a hundred per cent eradication, and in sections where they are plentiful. Although heavy sheep grazing certainly hurts reproduction of pine, the sheep are also our allies in destroying the deadly Ribes.

W. E. Bradder - Vt.

x x x x x x x

Note:-On a question from the Editor as to whether Ribes eradication by sheep was not more than paid for by destruction of young pine, as well as seedling pine, Mr. Bradder made the following comments:

I do not believe that sheep will browse the foliage of white pine. At least I never have found a lot where they had done so, and the sheep owners when questioned on the matter, all agreed that they did not. The damage that I referred to was from trampling of seedlings. It appears that the seedlings of white pine are more apt to be killed by trampling than the seedlings of other trees. However, heavy pasturing is necessary to bring about this condition, and either heavy pasturing or pasturing over a period of ten to twenty years seems necessary for the complete eradication of Ribes within the pasture. In the latter case, the pine reproduction may have been only slightly damaged as in the particular lot I referred to in my letter to you. This pasturing was done on the property of Mr. Homer Johnson of Rutland and there were pines of all ages on his pasture lot. A still better example comes to mind.

Mr. James K. Hyde, for whom I did some eradication work this summer, grazes several hundred sheep in pastures where the clumps of seedling pines are coming up thick and thrifty and where the crew found no Ribes within the fences. The secret seems to be light pasturage with sufficient feed for the sheep. The manner in which Mr. Hyde grazed his sheep would indicate that the sheep are really fond of Ribes and that they hunt them out and the repeated browsing kills them, as Ribes cynosbati were very large and plentiful over the fence from this pasture, which has been grazed for over 20 years.

Second Note:-The preceding article was read to Mr. Austin Cary, expert lumberman of the U. S. Forest Service, and he was much interested in the matter. Mr. Cary stated that stock grazing on recently cut-over lands in New England, which were growing up to hardwoods and pine, would benefit the woodlot, in that the stock would browse on the hardwood sprouts and keep them down, while giving the pine a chance to grow.

The question arose in Mr. Cary's mind as to whether the sheep would also keep down skunk currants. This is a matter which I could not answer, and it is referred to any of the blister rust agents who have had experience with sheep grazing on areas which abound in skunk currants.

R. G. Pierce.

BLACK CURRANT ERADICATION

Cultivated black currant eradication in southern Idaho resulted in the completion of this work for the state about August 15. For the balance of the month rechecking was carried on in counties which had been previously worked. The results for the month of August are as follows:

<u>County</u>	<u>Plantings Eradicated</u>	<u>Plants Eradicated</u>
Bannock	3	23
Bear Lake	4	35
Franklin	65	551
Fremont	20	126
Oneida	82	755
Total	174	1490

Washington. Cultivated black currant eradication was conducted in Chelan and Kittitas counties during August. A total of 36 plantings, representing 141 bushes were eradicated. The report states that very good cooperation was given us by all newspapers, and field contacts indicated that 75 per cent of the people had read articles run by the newspapers.

California. During the month 24 plantings consisting of 100 bushes were eradicated. A recheck of 72 places in Siskiyou and Humboldt counties showed 8 cases of resprouting.

Western Blister Rust News Letter. 9/15/27.

In a recent letter to this office Herbert J. Miles, Blister Rust Agent in Connecticut writes: "had a very good meeting at Warrenville Grange in Ashford on the 24th of last August. There were 30 or 35 present, and it was a very appreciative audience. I talked on blister rust for twenty minutes and then invited questions. We discussed blister rust and forestry for nearly two hours and I had a bang-up good time, and I think the grange members did too."

PLANTING WHITE PINE IN MICHIGAN

Author Recommends No White Pine be Planted in Current and
Gooseberry-Growing Districts.

White pine has been widely used for forest planting in Michigan. It is a native of the State and does well on almost any soil except heavy clay or very wet soils. It grows quite rapidly after it has passed the seedling stage and in good locations will grow two feet in height a year. The lumber is valuable. Box boards will be produced in about 30 years. For forest plantations it is best to use small seedlings, 2-year-old stock, spacing the trees 6 by 6 feet apart or using even a wider spacing up to 10 by 10 feet. The white pine does not prune itself of its lower branches very readily even with the crowding resulting from a close spacing and so in small plantations a rather wide spacing may be used and the trees pruned by hand as far up as can be readily reached.

The planting of white pine should be limited to certain localities, as it is subject to a disease, the white pine blister rust, which has one generation on white pine and the next on currant or gooseberry bushes. This disease has gained considerable headway in the east and in adjoining states, but so far has not appeared to any considerable extent in Michigan. It can only spread when the two hosts, currants or gooseberries, either wild or cultivated, and white pine, are within a few hundred yards of each other.* In many localities in Michigan currants and gooseberries are of commercial importance and in such localities white pine should not be planted, since, if the disease appears, one of the hosts must be destroyed in order to eradicate it.

Alfred K. Chittenden in "Forest Planting in Michigan."
Mich. Agr. Exp. Sta. Spec. Bul. 163, June, 1927.

*Professor Chittenden probably has in mind the spread of the blister rust from currants or gooseberries to white pine, which takes place generally, for a distance of a few hundred yards. The spread of the blister rust, however, from white pine to currants or gooseberries, may take place for a distance of over a hundred miles. Up to June 1927, the rust had been found in but two counties in Michigan.

R. G. Pierce.

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Cultivated black currants have been largely responsible for failure of the efforts to eradicate the blister rust, because the disease had spread long distances to black currants before the infected pine plantations were destroyed. They have been responsible for firmly establishing the blister rust in hundreds of square miles of white-pine forests which would have remained free from rust for many years if there had been no black currants present. Thousands of square miles of white-pine forests are still free from the rust, and if possible must be kept free.

S. B. Detwiler in U.S.D.A. Yearbook sep. #938.

BLISTER RUST DISCOVERED IN MICHIGAN IN 14 NEW COUNTIES

Results of scouting for blister rust in Michigan show that 14 new counties were found to be infected. In addition, one of the two old infected counties was found to be infected but the other was apparently free of the disease. The scouting was carried on by Messrs. Mandenberg, Sheals, Hodgkins, Corliss, and Stouffer. The counties reported infected previously to 1927 are Kent and Oakland. No disease was discovered in Kent county this year, but Oakland yielded both pine and Ribes infections. This was the only pine infection reported.

The new counties infected are: Huron, Sanilac, St. Clair, Macomb, Lapeer, Genesee, Midland, Isabella, Mecosta, Clare, Osceola, Saginaw, Oceana, and Cass. The infection seems to be heavy around the "thumb," light in Saginaw and Genesee, heavy again around the southern part of Clare, fading out to light in Mecosta and Osceola. Cass and Oceana counties are in a sort of isolated condition at present but may be linked up through more thorough scouting later. The disease in Cass county was reported by Mr. Cowdrey.

Most of the infections were picked up on the cultivated black currants. Flowering and red currants, wild gooseberries, and wild black currants were the other hosts.

The area of the infected counties is about 7,000,000 acres, so you can get some idea of the extent of the disease here in Michigan. That total includes Kent county as well as the other fifteen counties found to be diseased this year.

David J. Stouffer, Michigan.

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BLISTER RUST DEMONSTRATION AT EASTERN STATES EXPOSITION
AT SPRINGFIELD, MASS.

Eight Governors with Their Staffs See Blister
Rust Display

Have been demonstrating blister rust with the aid of display placed at Eastern States Exposition at Springfield, Mass. The entire week, Sept. 18 to 24 was devoted to this work, day and night. Thirty initial interviews were made, and contacts numbering up to 800 were made with persons interested in the rust but who were non-pine owners or city dwellers. The above notes cover the activities on my part for the week. Interest in the display was fine. Twelve contacts were made with out-of-state pine owners, where blister rust work has been done on their property. They said "this is the first time I ever saw blister rust and really knew the facts concerning the disease."

Governors and their staffs from 8 states saw our blister rust display. One hour was spent with a Mr. Crockett now serving his second term in the Maine legislature. Considerable time was spent with two professors now teaching forestry and four grade teachers who are trying to put across the blister rust control idea in their school.

G. Stanley Decre - Mass.

MAP SHOWING THE SPREAD OF BLISTER RUST IN MICHIGAN IN 1927.

MICHIGAN

SCALE - STATUTE MILES

0 10 20 30 40 50

LEGEND



Infection found
in 1927.



Infections found
prior to 1927.



O.V.W.
10-19-27.

THE HISTORY OF THE
CITY OF BOSTON



REPORT OF RIBES ERADICATION IN 1926 - 1927 ON S. D. WARREN COMPANY LANDS
SOMERSET COUNTY, ME.

SAME AREA WORKED IN 1926 & 1927

Name of Lot	Town	Year	Cost	No. of Wild Ribes	Total Acreage	Cost Acre
Colby Farm	Concord	1926	\$36.00	3,364	70	\$.514
" "	"	1927	18.20	1,000	70	.26
Murray Lot	Bingham	1926	36.00	300	30	1.20
" "	"	1927	7.80	10	30	.26
Dutton Lot	"	1926	7.50	50	45	.166
" "	"	1927	11.70	10	45	.26
Goodrich Lot	"	1926	7.50	46	45	.166
" "	"	1927	11.70	5	45	.26
Mottage Farm	"	1926	30.00	3,000	100	.30
" "	"	1927	26.00	50	100	.26
Washburn Lot	"	1926	30.00	124	60	.50
" "	"	1927	15.60	25	60	.26
Campbell Place	Athens	1926	30.00	2,000	15	2.00
" "	"	1927	3.90	20	15	.26
Brasier Farm	Brighton	1926	60.00	2,400	100	.60
" "	"	1927	26.00	100	100	.26
LOT WORKED IN 1926, EXTENDED IN 1927 TO COVER NEW PLANTATIONS OR LIME GROWTHS						
Smith Lot	Bingham	1926	15.00	43	30	.50
" "	"	1927	26.00	25	100	.26
Badger Place	"	1926	40.00	4,000	100	.40
" "	"	1927	60.00	5,000	100	.60
Tezier Farm	"	1926	7.50	25	15	.50
" "	"	1927	13.00	500	50	.26

LOT WORKED ONLY IN 1926

Name of Lot	Town	Year	Cost	No. Wild Ribes	Total Acreage	Cost Acre
Colby Pine Lot	Bingham	1926	\$28.00	2,000	15	\$ 1.86
Fraser Lot	Solon	1926	15.00	36	40	.375
<u>NEW LOT COVERED WITH YOUNG PINE REPRODUCTION</u>						
Kelliher Lot	Brighton	1927	30.10	4,000	100	.30

Summary of 1926 Data

Average number of Ribes per Acre - 26
Average cost per acre - 51.5 cents

- 265 -

Summary of 1927 Data

Average number of Ribes per Acre - 13
Average cost per acre, crew eradication - 30.6 cents

Mr. W. O. Frost in a letter of September 27, 1927, states in regard to the Ribes eradication on the Warren Company tracts, "the reason why so many Ribes are being found in this year's work for many of the lots is that there were thousands of small gooseberry bushes in the grass and stubble. The company believes it the best policy to re-eradicate for several years, rather than to attempt what seemed to be an impossibility the first time over."

NOTE ON PRUNING PINE FOR THE BLISTER RUST

In order to save the balance of the pine trees infected with blister rust on the plantation of Kinball Atwood at Andover, Maine, Messrs Pingree and Seavey are pruning every one of the 10,000 trees. It will take them about three weeks to complete this work. This area has been worked three times.

Previous notes on pruning these pine appeared in the Blister Rust News for January and February, 1926. Since, however, some of the original copies may not be available for reference, it may be well to summarize Mr. Atwood's work. In 1916 he planted 15,000 white pine. By 1924, as a result of infection from thousands of wild gooseberry bushes growing in rock piles and in a nearby swamp, heavy blister rust infection had already set in, 5,000 trees having died by this date. Ribes removal began in 1924 and was completed in 1925. Of the 10,000 trees left in 1924, 25% were infected with blister rust, 10% or about 1,000 had trunk cankers and 15% or 1,500 had branch cankers. Pruning the infected branches from these 1,500 trees began in 1925 and continued the next year. The cost of the work for 1925 was about 1.6 cents per tree. The average height of the trees by the end of 1925 was approximately 8 feet.

D. S. Curtis, Maine

Edit. This work of Mr. Atwood's is in the manner of an experiment and its working out will be of great interest. We are glad therefore that Mr. Curtis has been keeping track of the work so that the benefit of the experiment may be made available to other blister rust workers and through them to pine owners.

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PRAIRIE WEED HINDERS LATE SUMMER ERADICATION WORK IN VERMONT

My crews finished eradication work September 3. At that time there was considerable defoliation of Ribes, due to infection and in some sections to larvae eating the foliage. Ribes cynosbati, especially, were rapidly losing their leaves and, where growing in open woodland or pasture, appeared to average from 50 to 80 per cent of the leaves fallen. Some sections of my district are overgrown, wherever there is an abandoned pasture, with a species of cinquefoil, locally called "prairie weed". Its rusty foliage so resembled the late summer leaves of cynosbati that I held over till next spring several jobs where this condition was prevalent. Because of this prairie weed, the ferns, asters, and goldenrod and all the rest of the vegetation, late summer work surely runs up the per acre cost.

W. E. Bradder, Vermont.

FOREST GENETICS WITH PARTICULAR REFERENCE TO DISEASE RESISTANCE

* * * * *

White pine blister rust. For the present, Pinus strobus is the only host with which there are prospects of early results in increasing resistance. The disease has not been long enough in the Northwest to give much of a basis for work in Pinus monticola. While it appears fairly certain that the rust can be controlled at reasonable expense in most P. strobus country by Ribes eradication, there are certainly some localities where, because of abundance of Ribes or other reasons, it will not pay to grow this species, and less valuable species will have to be substituted. If it is possible to secure more resistant strains the frequency and thoroughness of eradication can be safely decreased and much of this doubtful or marginal territory may be profitably kept in white pine. If pine strains were selected for resistance to the destructive white pine weevil as well as for rust resistance and other characters, great advantage might result.* The general level of resistance of P. strobus to rust is probably higher than is the resistance of the native chestnut to blight, and hereditary improvement will be supplemented by Ribes eradication work, whereas in chestnut there is no supplementary treatment. The prospect of success in selection of white pine is therefore greater than with selection of native chestnut.

The method to be pursued is open to considerable question. Crude mass selection by simply collecting seed from the trees surviving in diseased stands containing much Ribes, may become a practicable procedure for large scale use at some future time, but at present there are no stands in which enough of the fatally infected trees have died, to make it effective. The stands, such as that at Kittery Point, which were early attacked, have been or will be cut by their owners as a salvage measure. In stands too young to be merchantable, where Ribes are especially numerous and no eradication is being attempted, a considerable mass selection will probably take place automatically in time as a result of the killing of a large proportion of the trees by the disease. Such stands should ultimately become a fair source for collecting seed for use in planting operations, until the slower but more certain methods described in the following paragraphs have time to bear fruit.

Line selection can be started at once on a small scale by collecting seed from the apparently most resistant trees, and extended as the further development of the disease in areas where Ribes are allowed to grow makes it possible to determine relative resistance more accurately. The apparently resistant trees should preferably be isolated by cutting neighboring trees to decrease the amount of pollen from

*A complication in such a program might develop in view of the fact that blister rust (Spaulding, manuscript) like the true rusts in general, and also the white pine weevil, prefer vigorous trees.

susceptible parents.

If practicable, a less empirical procedure should be followed. It would be highly desirable before using trees as parents to examine the degree of really hereditary resistance which they possess. The simplest way in which to test this is to propagate from the apparently resistant trees by grafts, which, according to the ornamental nurseryman, are relatively easy to secure with the 5-needled pines. At least fifty descendants should be secured in this way from each supposedly resistant parent. The clones* thus secured should be planted in a generally infected region, alternating them with rows of ordinary seedlings, and of grafted stock from ordinary trees. As soon as the test plantation is well established, it should have Ribes planted through it in sufficient number to give a good differential test of the resisting power of the pine to infection. When this test has gone far enough, say ten-fifteen years, the ordinary seedlings and the trees of the less resistant clones should be cut out, and replaced so far as possible with additional grafts from the trees whose progeny had proved most resistant. The test plantation would then become a plantation for production of resistant seed.

A modification of this plan is suggested by Dr. William J. Brotherton. He would use in the test plantation not vegetative progeny of the apparently resistant trees, but seedlings progeny obtained by controlled crosses between resistant trees. The two parents whose crossing resulted in the most resistant progeny, would then be used as the source of vegetative propagating material. As large a clone as possible would be obtained from each of the two trees, and the two planted in mixture and isolated from other pine for seed production purposes. If selfing one of the original resistant trees gave the best results, the plantation for seed-production would be made with grafts all from this one tree.

* * * * *

Carl Hartley,
Office of Forest Pathology.

Extract from Journal of Forestry,
October 1927, p. 667-686.

* Clone or clon: A plant group, the members of which have been grown from an original stock, but which do not come true from seed. - Funk and Wagnalls New Standard Dictionary.

WOODLOT OWNERS TAKE UP STATE FORESTRY PROBLEMS AT NORTH
WOODSTOCK (N.H.) MEETING

State and county officials, 75 woodlot owners including Senator Henry W. Keyes of Haverhill and Ralph Morgan of Richmond and forestry fame, took part in one of the most enthusiastic and instructive forestry meetings ever held in New Hampshire. The main meeting was at Robert Peckett's plantation on the Lost River road and at his Copper Mine Camp. Later in the day, the farm woodlot of Dr. Davis was visited.

The Peckett plantation offered an inspection of 14 acres containing 20,000 trees including white pine, red pine, Scotch pine, white spruce, Norway spruce, Douglas fir, and Balsam fir. The Davis woodlot contains 150 acres of mixed growth including spruce, white pine, beech, birch, maple and white ash.

Following the morning inspection trip, L. N. Watson, in charge of the state nursery, and T. L. Kane, blister rust agent in Grafton county, staged a planting demonstration. It included the use of the planting spade, heeling in the seedlings on their arrival, the puddling of the seedlings while being planted, and the establishment of a firm pack about the roots.

Mr. Peckett, first after-dinner speaker, stated there is no doubt but that New England has become the summer playground of America, and as such, will need to pay more and more attention to forestry and reforestation. He pointed out that years back with a much larger house he accommodated only 600 guests during the year, while last year, with a smaller house, he put up 15,000.

John H. Foster, state forester, explained the Walker Forestry Law, telling how any owner can get tax exemption for 100 acres, provided the property is not at present taxed at \$25 the acre and provided the reforestation program will provide 25,000 board feet per acre at some future time. He explained how the timber is not taxed until this point is reached.

L. E. Newman, in charge of blister rust work in the state, reviewed the progress of the work, explaining that it costs from a few cents to \$1.25 per acre to clean the land. He declared that the menace in the White Mountains is great because of the large number of currant and gooseberry bushes.

K. E. Barraclough, extension forester, pointed to the fact that New Hampshire men cannot afford to have any land idle, and that areas not fit for other uses, should go into forests. "Natural regeneration should be allowed whenever possible," Mr. Barraclough pointed out, "but on other areas planting is recommended, with weeding, thinning and pruning practiced afterward to raise the quality of the timber." "The present low box board market influences the present poor stumpage value," he said, "because 90 per cent of the New Hampshire product is of box-board quality. "He added that the retail value of the better stuff has not lowered materially.

The Union, Manchester, N.H.
Sept. 20.

MEET PRINCE PINE

(Continued from September Issue)

Prince Pine is Secure

Prince Pine, the young tree in Mr. Farmer's plantation, was looking forward to the return of the eradication crew from the far end of the woodland where the men were destroying the last of the currant and gooseberry bushes on Mr. Farmer's property. It was the last day of work on this farm and tomorrow the crew were to start eradication of Mr. Gardener's gooseberries. Dr. Rust was with the crew nearly all morning and Prince was now repeating to himself the lunch-hour conversation which had taken place between the doctor and Mr. Farmer.

It Pays To Be On Guard

The doctor had related how he inspected the work and found very few bushes missed by the crew. Most of these were small and usually screened by other foliage so that they were less dangerous than the larger bushes growing in the open. Mr. Farmer was advised not to relinquish the search for these bushes and to uproot a currant or gooseberry bush whenever it was found. The property owner can accomplish much toward controlling this disease by being constantly on the watch for the bushes and destroying them when he goes about the farm on other work. Fence rows which are always likely places for these bushes to grow should be checked every spring when fences are being repaired. There are countless other occasions when the farmer may find stray bushes and he must learn to be on guard.

Best Time to Search

Spring and early summer are the best times to search for and find currant and gooseberry bushes because their foliage opens earlier than most other shrubbery and they can therefore be found before other vegetation develops to interfere with vision. If Mr. Farmer and Freddie would spend a day or two every spring in checking the places where bushes are most likely to grow they would have little difficulty in keeping the farm free of them. If some such system as this is not followed they should make another thorough search after six or eight years or possibly less if they are found to be restocking. Mr. Farmer decided that he would check the fences and low places every spring and be on the watch at all other times for stray bushes.

It was evident to Prince that he and the other pines in the plantation were reasonably safe from the disease for a few years at least and with Mr. Farmer constantly on watch for bushes there was no further need for worry. At the Scout's suggestion the crew had already rechecked the stone walls near the plantation and it would be difficult to find any bushes there. Prince was now secure and he knew that by the end of the day all other pines on Mr. Farmer's property would be equally safe from the dreaded disease of blister rust.

W. J. Endersbee, Mass.

Berkshire Farmers' Bulletin. Sept. 1927.

MOPE WHITE PINE FOUND IN OREGON

Mr. Goodding reports the following with reference to new areas of white pine which he recently discovered in the northwestern part of Klamath County, Oregon east of the crest of the Cascade Range:

"I made a special trip into the regions about Crescent and Odell Lakes to study white pine there. The country is for the most part grown up to a dense stand of lodgepole pine but in places western white pine and sugar pine occur in some abundance. That about Crescent Lake is mostly inferior but is much superior to the other species. The north side of Odell butte has a stand of white pine which is conspicuous from the highway to Crescent from Odell Lake. In much of this region lodgepole seems determined to be supplanted by western white pine and mountain Hemlock. This trip was continued south to Woodruff Meadows by way of Diamond Lake. Between Diamond Lake and the meadows it is surprising to note the quantity and excellence of the western white pine. As one travels northward there is an increasing amount of sugar pine."

Extract from Western Elister Rust News Letter.
September 15, 1927.

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THE MELANCHOLY PINE

"John C. Franch, the Northern Pennsylvania poet and naturalist, has often said that he gained much inspiration seated beneath the dark, overhanging branches of a huge white pine which stands in front of his Potter County home," writes Henry W. Shoenaker in the Altoona Tribune. "A session under the venerable pine usually evoked a series of brilliant fancies, which will live in the history and folklore of the Keystone State. The German foresters two centuries ago coined a very clever, as well as a telling, name for the white pine, which tree was introduced into the Rhineland early in the Eighteenth Century. They called it the Wehmuth's Kiefer, or "melancholy pine."

Sad though the white pines seen in Pennsylvania, which the Indians always claimed held the imprisoned spirits of rebellious war-chiefs, those which have been grown in Europe are still sadder in mien, and the dirge is ever sighing through their branches. The writer will never forget the group of American white pines that stand on Isola Bella, in Lago Maggiore, in Italy, which were planted from seeds brought by a returned Italian traveler about 1825. It is the story of the gardeners at that enchanted isle that the birds are afraid to rest on these trees, as they keep up such a mournful wailing that they fill with unquiet the hearts of the birds. The wood of white pines grown in Europe is shaky, and not of good quality, and it seems as if this tree will only thrive and grow to its fullest maturity on American soil. One of the tallest original-grown white pines in Pennsylvania can be seen in Chadwick's Gap, near the village of Eastville, Clinton County. It rears its dark head two hundred feet in the air, and surveys Sugar Valley with a proud defiance and dignity, although almost the last of its race."

American Forests and Forest Life,
January, 1927.

WHITE PINE

Pinus Strobus, Linnaeus

There is no tree in the world that surpasses the White Pine in beauty, stateliness, individuality, and usefulness. Reliable records show that the first American house was built of White Pine.

It is the only evergreen tree native to eastern North America that has soft slender, flexible straight, bluish-green leaves grouped in clusters of five. They are 3 to 5 inches long and persist for 2 years.

The cones are 5 to 10 inches long, short-stalked, narrowly cylindrical, rarely hang long on the trees. The conescales are thin, flat, and without prickles.

The trunk is straight, when grown in dense stands is clear of branches for many feet from the ground. The lateral branches occur in whorls of 3 to 7 arranged in horizontal layers. Upon falling they leave distinct circles of branch-scars. The wood is soft, light brown, straight-grained, easily worked. It is used for a wider range of purposes than any American wood.

The White Pine is native only to eastern North America. It is found from Newfoundland west to Manitoba and Minnesota, southward to New Jersey, Pennsylvania, and Illinois and along the mountains to Georgia. Formerly it made up a large part of the forests throughout New York, but in many places it has been completely cut out. It is generally distributed in the northern part of the State and in the Adirondacks up to 2,500 feet. In recent years it has been planted widely in all parts of the State. White Pine is the most important forest tree in eastern North America and probably in the world.

Extract from "Common Trees of New York"

By Jos. S. Illick.

Presented to the Schools of New York by the
Chas. Lathrop Pack Forestry Trust.

Published by The American Tree Assoc. of
Washington, D. C. 1927.

Edit.-The last sentence in the description may be slightly extravagant, but it shows the high value placed on the tree we blister rust control workers are engaged in protecting. Pausing for a moment, to realize the nobility of our calling, is worth while. While in summer we must have our eyes more or less on the ground for Ribes, we should have our thoughts centered on the host we are protecting, the White Pine.

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J. L. Richards of New Hampshire and Boston writes October 11, that the September number of the Blister Rust News looks good to him, particularly on account of the article of Newman's on page 233, and Riley's on page 231. "They constitute an important contribution to the literature of control phenology".

FORESTRY IN IDAHO'S WHITE PINE

The Clearwater Timber Company Embarks Upon a Program of Permanent Forest Management

* * * * *

Under the present Idaho forestry law, continuous growth and protection on forest lands is still further assured.

* * * * *

Within the past year, one large company operating in white pine, made a survey of 47,000 acres of cut-over land to determine the character and amount of young growth. The study revealed 54 per cent of this area to be satisfactorily stocked.

* * * * *

The Clearwater Timber Company of Lewiston, Idaho, a Weyerhaeuser affiliation of which J. Philip Weyerhaeuser, Jr., is the general manager, is now opening up the largest contiguous body of white pine in Idaho.

* * * * *

The timber belt to be opened up by this project comprises the company holdings now approaching 200,000 acres; 125,000 acres more belonging to other corporations and individuals; 125,000 owned by the State of Idaho, and a vast area of National Forest timber which will eventually come out through the Lewiston gateway.

* * * * *

The company began logging in September, 1926, in second growth white pine 80 to 100 years old that is cutting out better than 40,000 feet to the acre. Preliminary surveys by the Idaho School of Forestry indicate that with care in logging, sufficient trees eleven inches in diameter and under would be left to furnish a profitable second cut in 1961. Six weeks after cutting began the school ran thirty strip, acre surveys through representative cut-over areas recording all residual trees by species and diameter classes. These surveys revealed that an average of 97 trees per acre, eleven inches and below in diameter were being left. Of these 30 per cent was white pine, 50 per cent white fir, 10 per cent cedar, and 10 per cent Douglas fir, larch, lodgepole pine and Engelmann spruce.

* * * * *

F. G. Miller,
American Forests and Forest Life.
August, 1927.

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RED CEDARS AND APPLES ARE NOT GOOD NEIGHBORS

Choose between red cedars and apples. In the eastern United States, and perhaps in some other parts of the country, a neighborhood may have either but not both of these trees without danger of trouble for both. The cedar and the apple had been found to have a relationship--or antagonism--similar to that existing between the barberry bush and wheat; in which each is affected by one of those strange fungous growths in which one generation of the fungus develops on one plant and can not reproduce on that plant, but only on the other of the pair of plants so strangely coupled.

For years apple-tree rust was familiar to scientists, as was also the Virginia red-cedar rust, which produced galls. The two were supposed to be distinct, but after the wheat and barberry coupling was established further studies revealed that a similar relationship existed between apple trees and red cedars. Spores from the cedar gall are blown to apple leaves and fruit, where they reproduce and cause damage within a few weeks, after which the spores of this second generation return to the cedar for a lifetime of about 22 months.

At first the apple rust affected only native crab apples, but from year to year it extended its damage to one supposedly resistant variety after another. Spraying, fatal to most other fungous growths, did not control this rust, and Virginia apple growers found that the best method of preventing damage was to eliminate the cedar trees within a distance of a mile or two of apple orchards. When this was done damage from apple rust ceased. Or, conversely, in case the cedars are the more valuable, they should be protected from infected apple trees.

The life history of this rust and the measures necessary for protection are outlined in a pamphlet, Separate No. 941-Y from the Yearbook of Agriculture, 1926, recently published by and obtainable from the United States Department of Agriculture, Washington, D. C.

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Note:-As was intimated by Mr. Hurford of Rhode Island in the September number of the News Letter, when he talked cedar rust control to the farmers a knowledge of other common fungous pests, which have two hosts, is very useful. It is for that reason that the above note on red cedars and apples is used.

R.G.P.

P E R S O N A L S

All blister rust control workers, both eastern and western, will be interested in the promotion of Dr. John S. Boyce, Chief of the Portland, Oregon, office of Forest Pathology, Bureau of Plant Industry, to the directorship of the Northeastern Forest Experiment Station, which has just been announced by Secretary of Agriculture Jardine. It is expected that Dr. Boyce will remain in Portland until early in 1928 in order to complete some important research projects on which he is now engaged.

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Dr. J. F. Martin returned to the Washington Office September 26, after a 3-week's trip through New England and New York.

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Mr. Russell C. Hertzler resigned his position as blister rust agent in Pennsylvania on August 31. His permanent address is 3232 Green St. Harrisburg, Pa.

Mr. Douglas Drake has been appointed assistant accountant in the Washington Office, effective September 20.

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Mr. Harry J. Daly was appointed property clerk in the Washington office, effective September 16.

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Effective October 1, Agent John MacGregor White's headquarters was changed from Wiscasset, to Waterville, Me.

- - - - -

Mr. Rene LaRoque has been appointed agent with headquarters at Spokane, effective September 26.

- - - - -

Miss Beulah S. Slade, clerk at Corvallis, Oregon, resigned September 22.

- - - - -

Agent Robert L. MacLeod's headquarters have been changed from Corvallis, Oregon to Spokane. The change was effective October 10.

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Mr. A. E. Fivaz arrived at the Washington Office October 3. He will be engaged during the winter in working up notes for publications on the experimental work conducted by him at North Hudson and Warrensburg, N. Y., during the past summer.

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Mr. Carl C. Perry, Massachusetts Blister Rust Leader, was married to Miss Pearl Sawyer Calef, September 20, 1927. They will make their home in West Newton, Massachusetts. Congratulations C. C. from the Washington Office.

It is with regret that we learned of the death of one of the blister rust workers, Mr. Geo. S. Williams of Massachusetts, who was instantly killed in an automobile accident on August 27. Mr. Williams was one of Mr. Endersbee's foremen.

P U B L I C A T I O N S

Blister Rust

Anon. Program of Fourth Annual Adirondack Forestry Tour.
Sept. 15-19, 1927. Notes on protection from blister rust
appear through the Program. See pages 16, 18, 22.

Note:-This is an exceptionally fine program of a tour, printed
and with numerous photographs. How we envy the New Yorkers and
others who can indulge in such a tour!

Hartley, Carl. Forest Genetics with Particular Reference to
Disease Resistance. Journal of Forestry. Vol. 25, No. 6.
October, 1927. p.667-686.

Two pages are devoted to White Pine Blister Rust: See this
number of Blister Rust News, page 267.

Stillinger, C. R. White Pine Blister Rust in the West. In Proc.
West. Plant Quarantine Bd., Spec. Publ. Calif. Dept. Agr. 72.
p. 50-52. 1927.

Stillinger, C. R. The White Pine Blister Rust Situation on the
Pacific Coast. In Proc. West. Plant Quarantine Bd., Spec. Publ.
Calif. Dept. Agr. 73, p. 68-70. 1927.

Nyckoff, S. W. & G. A. Root. The Problem of Blister Rust Control
in California. Month. Bull. Calif. Dept. Agr. 16: 277-283. illus.
My. 1927. No. 5.

Blister Rust Quarantine

Anon. Permits for Currant and Gooseberry Shipments. The National
Nurseryman. Sept. 1927. p.262.

Forestry

Miss Helen E. Stockbridge, Forest Service Librarian, has recently
compiled a mimeographed bibliography of 35 pages on "The Forest
Problems of the Northeastern States," dated August 1, 1927.
These are available at the Forest Service as long as the supply
lasts.

While some blister rust publications are cited these are very
few, but for the more general forest subjects this bibliography
by authors, should be found very useful to any who have access
to the publications cited.

Sugar Pine

Hemphill, J. Sugar Pine and its Distribution. California Lumber Merchant. July 1, 1927. p. 108,114,129.

Western White Pine

Miller, T. G. Forestry in Idaho's White Pine. The Clearwater Timber Company Embarks Upon a Program of Permanent Forest Management. American Forests and Forest Life. August, 1927. p. 459-462. See page 273 of the Blister Rust News for extract.

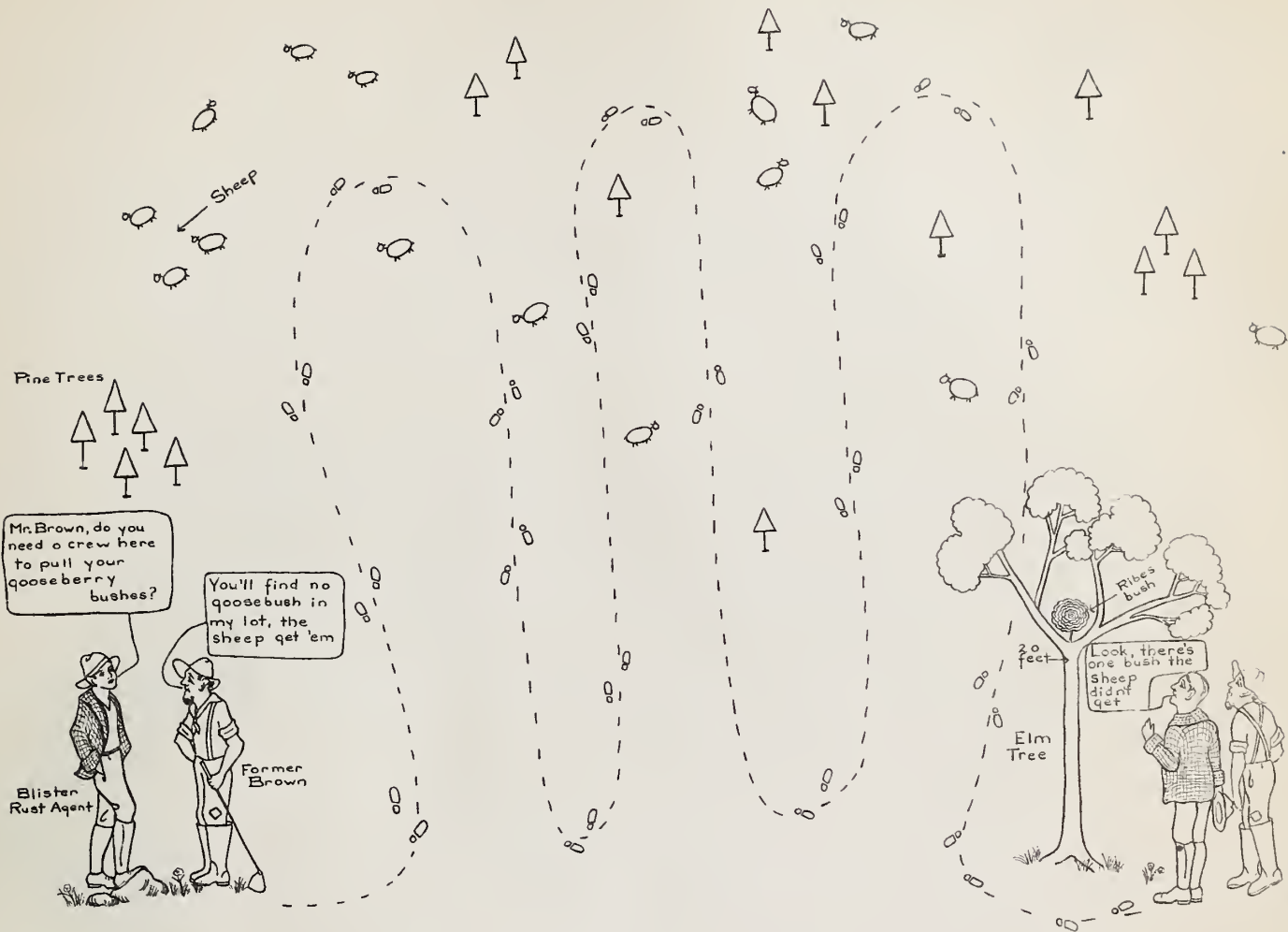
White Pine

Chittenden, A. K. Forest Planting in Michigan. Michigan Agri. Experiment Sta. Spec. Bul. 163. June, 1927. Two paragraphs on White Pine appear on Pages 13 & 14. See page 261 of this issue, Blister Rust News.

Endersbee, W. J. Meet Prince Pine. Berkshire Farmers' Bulletin, August, 1927.

Page, Frederick S. Living Stumps. Journal of Forestry. October, 1927, p. 687-690.

This is a study of white pine (P. strobus) and hemlock stumps.



On The Firing Line With Ribee Bill.

Well Agent'. did you see Bradder's article on page 259 on sheep helping us keep out the gooseberry bushes. It's a fact; but if you have had different experiences, don't be backward about bringing 'em for'ard.

What do you think of Doc Hartley's high-brow article on Forest Genetics?!

The blisters am surely popping in Michigan and Pennsylvania. It looked as if the rust was giving Stouffer a house-warming in Michigan.

There's a lot in this number on white pine, but why shouldn't there be. Aint it white pine we're protecting. The more we know about white pine the better. How about having a little pine lot o'your own, like Curtis of Maine, Endersbee of Massachusetts, Swain of New Hampshire and probably others of our Blister Rusters. Tarbox, formerly of Maine, used to say it paid him well to own a pine lot, 'cause he knew from experience what it was to protect his pine.



BLISTER RUST NEWS

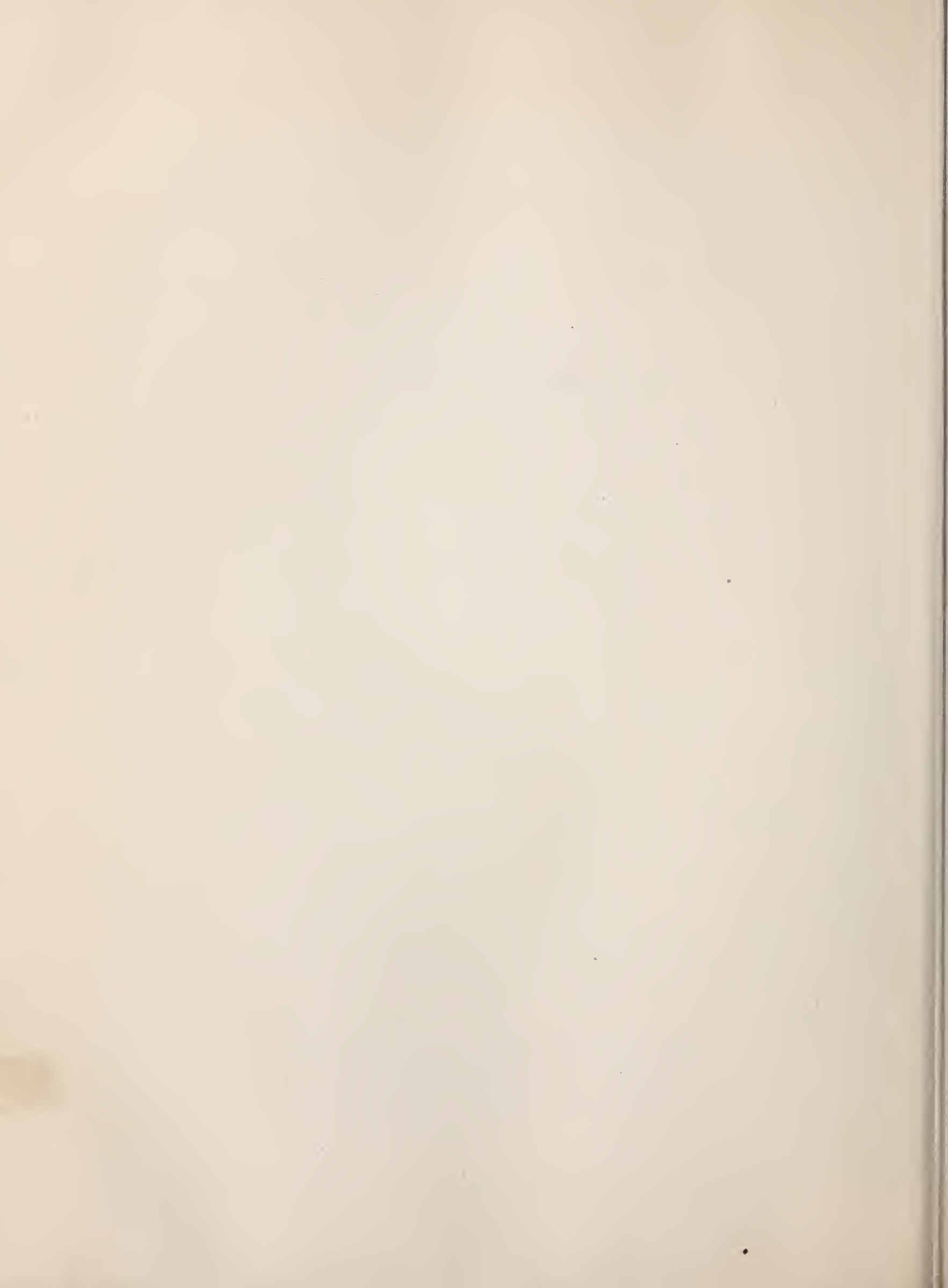


November 1927.

Volume XI

Number 11

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control



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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

T H E B L I S T E R R U S T N E W S

Issued by the Office of Blister Rust Control
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VOL. 11, No. 11

November, 1927.

RIBES AND SHEEP

Study Plot #14 on the North Hudson Experimental Control Area (N. Y.) is located in a moderately dry, closely cropped but forested, sheep pasture. The Ribes (mostly R. rotundifolium) on the plot have been under observation since 1921. An inspection of the measurements taken in 1923, 1925 and 1926 on this and on the other sixteen study plots on this area which are outside of the sheep pasture, shows:-

1. Although the live stem of some bushes is probably decreased by sheep grazing, the number of bushes per acre on this plot is more constant than on fourteen of the other sixteen which are not grazed.
2. Although the site is not especially favorable for seedling comeback on Plot #14, due to the absence of rock outcrop, the rate of seedling comeback on this plot is exceeded by only two other plots, both of which are situated on ledgy sites, especially favorable for Ribes regeneration.

It would seem from this data, that sheep-grazing is not as important a Ribes-controlling factor as asserted by Mr. Bradder in his article in the last Blister Rust News. It is difficult to determine the "why", for the presence or absence of Ribes on a particular area of ground. The mere fact that Ribes are absent from a pasture is not proof of the effect of browsing, the real reason is probably much more fundamental.

Our investigations are now specifically pointed at determining the life histories of important Ribes species, and it is hoped that some of the "whys" of Ribes distribution may come to light from this work.

A. E. Fivaz - New York.

EXTENSIVE SPREAD OF BLISTER RUST THIS SEASON IN THE NORTHWEST

Infection First Reported from Idaho

Scouting for the disease which has been carried on during the summer and fall has showed 1927 to be a very favorable year for the spread of the rust. Long distance spread generally occurs in favorable years, those characterized by moist springs, which favor the infection of currant and gooseberry bushes, and summer or early fall rains, which help to intensify the rust on these or nearby bushes, and to spread it to pines.

Prior to this season, the rust had been found in considerable profusion in the Puget Sound region of Washington, in western British Columbia and in Revelstoke to Nelson region of eastern British Columbia. In 1923 scattered infections were found on currants and gooseberries in the Okanogan region of Washington, and in 1925 in northwestern Oregon.

Because of the favorable nature of this season, an intensive scouting program was carried on. The most important results are as follows:

1. The rust has spread south from its previously known range near Nelson, British Columbia, into northern Idaho (infection found on wild gooseberries near Priest River) and northeastern Washington (eleven infections on wild currants and gooseberries found between Okanogan and Cusick), and southeast from Nelson to Moyie, British Columbia, 20 miles north of the Montana border.
2. The rust is firmly established on white pines in western Washington. Two extensive and well developed centers of pine infection exist in Whatcom and Kitsap counties. The farthest south pine infection thus far discovered is on the Columbia National Forest, just north of Mt. St. Helens.
3. The rust is rapidly spreading into Oregon. Infected currants and gooseberries have thus far been found in eight localities in Hood River, Multnomah and Columbia counties.

This scouting plainly shows that the rust is rapidly spreading toward the white pine stands of north Idaho, northeastern Washington and northwestern Montana, and also toward the sugar pine stands of southern Oregon and California.

Western Blister Rust News Letter.

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COMPTROLLER GENERAL'S RULING

Subsistence - Headquarters - Travel Status

An absence from headquarters, performing duty in an adjacent city 4 miles distant, the car fare being 10 cents per trip and requiring 30 minutes or less to make the trip between the two points, does not constitute a travel status to entitle an employee to reimbursement of subsistence expenses or per diem in lieu thereof.

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BLISTER RUST CREWS HOLD MEETING AT EXETER, N. H., FARM

Watch Demonstration of New Planting Tool That
Speeds Up Work.

The blister rust workers of Rockingham county, 25 in all, met here recently for general instruction in forestry and for discussion of problems that arise in the field work. They were the guests of Lewis C. Swain, blister rust control agent for Rockingham county. Present at the meeting were K. W. Woodward, head of the Forestry Department at the University of New Hampshire; K. E. Barracrough of Durham, extension forester; L. E. Newman, state leader in blister rust control work; and James A. Furlington, Rockingham county agricultural agent.

The morning session was given over to field demonstrations conducted in Mr. Swain's forests. A planting demonstration was given, using a special bar, designed by Mr. Swain and found greatly to increase the speed at which seedlings can be set out. It was shown that the use of the bar, cuts the time for planting 1,000 trees nearly in half.

Pruning was the second subject considered and areas were studied where various practices have been carried on. Several trees were pruned with the curved type of pruning saw, which proved itself an efficient tool. Pruning for weevil damage and several other experimental plots were studied. One of the most interesting of these showed a successful method of killing out giant juniper bushes by the planting of seedlings at various distances among the root area.

The afternoon session was held at the Exeter high school. Professor Woodward spoke on the advances made in forestry work and reviewed the work being done at the state university. Mr. Barracrough gave an illustrated talk on 4-H club work. Mr. Newman's talk was a review of the blister rust control work for the past decade. "Each crew member can consider himself a part of a large organization," he said, "that is carrying on control measures in 17 states." Mr. Furlington showed motion pictures on blister rust work. The meeting ended with a general discussion of forestry and blister rust control in which all took part. Mr. Swain presided.

Manchester (N. H.) Union. July 19, 1927.

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THE CLOSE OF THE ERADICATION SEASON IN VERMONT

The eradication work in Vermont along the Champlain Valley stopped about September 1, except for a few private jobs carried on without state supervision. In the Connecticut River Valley, the crew work lasted until September 30. The leaves on Ribes were so heavily infected in some sections that leaves fell early and a second crop came out and show a heavy infection at present.

Oct. 18, 1927.

S. V. Holden - Vermont.

A VISIT TO MR. KELLOGG'S WHITE PINE LOT IN GREAT BARRINGTON
MASSACHUSETTS

An Owner Prunes his Infected Pine

A visit to Mr. Kellogg's place in Great Barrington, Mass., in late July of this year, by the authors showed what a practical man could do in improving his waste land and his woodland.

In a pasture lot adjoining large pine, an abundance of young pines had sprung up. The blister rust had hit them fairly hard before the owner thought of the damage being done the trees or how to protect them. Mr. Kellogg reasoned that if he could save these pasture pines, (then 6 to 10 years old,) from the blister rust by removal of diseased branches that he would gain considerably by the operation. This control by pruning was carried on two winters ago.* When visited in July of this year there was relatively little blister rust found as compared to that present in 1925.

Dense Pine Stand Has No Ribes

Adjoining the pasture lot was a small stand of close-growing pine about 40 feet in height. These pines have been pruned to a height of 10 feet and have been recently thinned. The trees were growing so close together that practically no vegetation grew underneath the pines. The ground was heavily carpeted with pine needles. The question immediately presented itself: What is the use of gridironing a dense pine grove such as this for any currants and gooseberries? Walking through it we could see that this would be useless, the only danger being from currants and gooseberries which might be growing outside of the dense grove, either at the edge or beyond or in any island in the area.

Though eradication had already been carried on several years ago at Mr. Kellogg's place, some wild gooseberry bushes were found immediately adjoining the dense pine growth in July, 1927. As we walked through the pine we ran across a small island or bare area approximately 40 by 100 feet where, for some reason or other, no pines were growing. In this island one or two wild gooseberries were also found.

I believe that the discovery of the fact that no Ribes were found growing within a pine grove, such as Mr. Kellogg's where the crowns were so close that little or no sunlight reached the ground has a wide application in our blister rust control work. It is possible that a pine owner who has a young stand, which is so open that it is necessary to work the ground at periods of 4 to 6 years, can be assured that it will not be necessary to look for Ribes within the pine as soon as it arrives at a certain age and crown density. To get his pine in that condition it may be necessary for him to plant the openings. Securing a full stocking of the stand would be of benefit, not only from a blister rust control standpoint, but also from the standpoint of timber production.

Oct. 3, 1927

R. G. Pierce and W. J. Endersbee

Note:-Commenting further on the above Mr. Endersbee writes October 18, 1927.
"I fully believe that density is a big factor in keeping down Ribes growth. I reached that conclusion soon after I came here as agent, and every year I am more convinced. I believe it to be a factor which will eventually go far toward simplifying and solving our control work."

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BERKSHIRE BITS

(Gleaned from the Pittsfield, Mass. Eagle)

The bug men were around pulling up currant bushes Saturday. Some say there will be a short crop next year. Sandisfield item, Sept. 14, 1927.

The Massachusetts Department of Agriculture, blister rust control, in an endeavor to emphasize the harm done each year by pine blister rust, has a display on the grounds south of the grand stand, W. J. Endersbee is in charge. Notes of the Fair, Gt. Barr. Sept. 28, 1927.

Under the direction of W. J. Endersbee of the forestry department, 15 Great Barrington scouts worked at Lake Buel last Saturday, uprooting gooseberry bushes. Two groups of boys, one from troop 22, the other from troop 54, spent most of the day in this work to check the white pine blister rust, which germinates on the wild gooseberry and currant bushes, passing from them to the white pine, which it soon kills.

About 1600 bushes were pulled by the boys on property adjacent to their camp. Competition between groups was very keen; prizes having been offered to the group bringing in the most plants, and the group missing the fewest. Troop 22 brought in the most bushes, but apparently the Scouts of troop 54 were sharper-eyed, as they missed the least number. Prizes will be awarded at this week's troop meeting.

Mr. Endersbee, who is also assistant scoutmaster of troop 54, will be in charge of the boys forestry work and already has several projects in mind for those interested.

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NEW HAMPSHIRE FARM BUREAUS ENDORSE BLISTER RUST CONTROL PROGRAM

Both the Merrimack county and Sullivan County Farm Bureaus, at their annual meeting recently renewed their former pledges of support of the county blister rust control program. A very spirited and interesting debate took place at the Sullivan County meeting. It was led by the president of the State Federation and ably carried on by several members of the county bureau. Its substance was to the effect that up to last year the towns in the county had been lagging behind those of other counties, that the disease was spreading rapidly and that if they were to do anything worth while, it was up to them to get to it right away.

T. J. King. N. H.

GERMINATION OF R. NIGRUM SEEDS

Reading in the August number of the Western News Letter, "Some Interesting Observations on Ribes Germination," brought to mind an observation on the germination of English black currant seeds. During a recent study on the sprouting of previously eradicated bushes, the presence of 9 small plants of black currants revealed that they had come from seed since the eradication of the original bushes, 12 in number, in 1925. These bushes had been growing in a back lot garden near a faucet which had obviously dripped for a long period as the ground nearby was thoroughly saturated. The soil was a rich, dark loam, partially shaded by an overhanging tree. The conditions were ideal for seed germination. This is the first instance of the germination of R. nigrum seeds that has come to the attention of the writer.

G. A. Root 10/15/27
Western Blister Rust News Letter.

Note:-Any observations by our Eastern agents of germination of European black currants around old bushes would be appreciated. In order to make observations of most value, good-sized specimens of the old bush with leaf, twig and branch should be forwarded the Washington office, together with the seedlings collected beneath the bush.

R. G. P.

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ERADICATING CULTIVATED BLACK CURRANTS UNDER DIFFICULTIES

While working in Kittitas County, Washington, Mr. Macomber and myself ran into a bunch of 40 R. nigrum, growing on the bank of and in a slough. In three and one-half hours all the bushes on the bank were dug out, when, lo and behold, Macomber discovered a bush growing among the rushes in the slough. A coin was flipped to see who would get the bush. Ah h-- you can guess who went after it. I took off my shoes and rolled up my pants to find that I went down to my knees in mud. The next bright thought was our bathing suits which we had in the car. Macomber then decided to give me a lift. In all, we took five bushes out of that slough. It was necessary to go about a foot under the water for the crowns of these babies but we got them. Moral: Please tell your friends, if you have any, not to plant their R. nigrum in a slough. It's too tough on the guy who digs them out.

B. A. Ganoung in
Western Blister Rust News Letter.

Note: Can any of our Eastern Blister Rust Agents match this?

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NEW INFECTION REPORTED FROM MICHIGAN

Mr. J. M. Corliss reports that Mr. Stouffer and he found R. nigrum infected with blister rust in Bay and Tuscola Counties, Michigan, at Munger and Cass City respectively. This makes a total of 18 counties in which blister rust has been located in Michigan.

A NOTE OF THANKS

Doctor Carl Hartley of the Office of Forest Pathology, takes this opportunity to thank the personnel of the Office of Blister Rust Control for forwarding them a fine collection of specimens of telial material which will be used for study. So many specimens were received that it seemed more advisable to make a general acknowledgment rather than separate acknowledgment to each individual.

R. G. P.

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NEW YORK HOLDS FIFTH ANNUAL WHITE PINE BLISTER RUST CONFERENCE
OCTOBER 10 TO 13th

New York State held its Fifth Annual Blister Rust Conference, October 10th to 13th. The Conference was opened at Albany, Mr. H. L. McIntyre, Supervisor of Forest Pest Control, acting as Chairman. Hon. Alexander MacDonald, Conservation Commissioner, gave the address of welcome and spoke on "New York's White Pine Blister Rust Problem". He was followed by Mr. W. G. Howard, Supt. of Lands and Forests, who spoke on "Uniform State Practice in Blister Rust Control".

The other speakers and their subjects were as follows: Mr. E. C. Filler, Pathologist, Boston Office, "1927 White Pine Blister Rust Accomplishments in the Eastern States". Prof. J. A. Cope, Extension Forester Cornell University, "Future Blister Rust Policy from a Forestry View Point". Dr. E. P. Felt, State Entomologist gave an illustrated lecture on "Our Common Destructive Forest Insects". Dr. H. H. York, Supervisor of Scientific Investigation, "The Need of Forestry Investigative Work". Mr. A. F. Amadon, Supervisor of Reforestation, "History of and Accomplishments in Reforestation in New York". Mr. Ralph A. Sheals, Quarantine Inspector, "Federal Blister Rust Quarantine Problems", and Dr. B. D. Van Buren, Director of Bureau of Plant Industry, Dept. of Agriculture and Markets, "The Advisability of More Systematic State Blister Rust Quarantine Regulations."

The office program concluded with the reports of the year's accomplishments by the blister rust agents.

Field Program

We left Albany on October 11, via auto at 7:30 a.m., and traveled to Ballston Water Works Plantations, where a careful inspection of "Crown Weevil" damage to Scotch Pine was made. From here the party drove to Robert James' Estate at Saratoga, where inspections were made of "Necrosis" of Red Pine, "Weevil" on Red, White, and Scotch Pine, and "Sweet Fern Rust" on Scotch Pine. While en route to Poland via Gloversville, marginal eradication problems were demonstrated and discussed at various places. Nearing Poland, where the party stopped for the night, a fire fighting demonstration was made on Dr. York's car that for some unknown reason caught afire. The boys riding with Dr. York worked vigorously for 15 minutes to determining the source of smoke that seemed to curl from the back of the seat. When the source of fire was found, it was quickly extinguished.

New York Field Program Cont'd.

On October 12th inspections were made of plantations of Red, White and Scotch Pine, Norway Spruce and European Larch at Trenton. These plantings have made exceptional growth. Other plantations were inspected at Woodgate on Russells and Oley's area. In the afternoon a most interesting inspection was made of a variety of forestry plantations at the Masonic Home Camp at Round Lake and of Dr. York's experimental studies on Woodgate rust and natural reproduction of Scotch Pine. This was well worth seeing, for here can be seen pines, spruces and larch fifty and sixty years old, of good growth and size, the plantations being established originally by sowing the seed brought from Europe. Along the road to Booneville, observations were made of Scotch pine planted to prevent drifting of sands. In some places some of these trees were buried in sand, several feet up the stems, with but a small conical crown sticking above the sand, still growing vigorously in spite of adverse conditions. The party proceeded to Lowville nursery where inspection of the State Nursery was made. Overnight stop at Lowville.

October 13th. Inspection was made of white pine weevil control work on Virkler's plantation in town of Watson, Lewis County, where it is demonstrated "weevil" can be controlled if control work is started soon enough after this pest is noted in a plantation. Mr. Virkler has been cutting out infected leaders for the past several years and observations show that where the leaders were cut out, the trees grow straight and vigorous. On the return trip to Albany an inspection was made of natural reproduction of Norway Spruce at Trenton Falls and inspection of Trenton Falls Hydroelectric plant at the same place. After dinner at Poland, the agents returned to their respective headquarters.

FORESTRY MEETING IN TAMWORTH, N. H.

A sawmill demonstration held Wednesday, October 19, at the mill of the South Tamworth Industries, So. Tamworth, demonstrated the sawing, scaling and grading of hard and softwoods, to about 75 people.

Hardwood logs were sawed and graded by Mr. Bowler, an expert grader, in the forenoon. Each board was examined and the reasons given for its classification.

Luncheon was served by the South Tamworth Industries at noon. At this time there was a general discussion centering about the problems of sawing, grading, growing of lumber, forest taxation, and protection. Mr. J. H. Foster, State Forester, gave a short talk, mentioning the various phases covered by the department. Owen Johnson, President of the New Hampshire Lumbermen's Association stressed the unfairness of the taxes upon woodlands in New Hampshire.

A blister rust demonstration was arranged by the agent showing the disease on large and small trees and pamphlets were distributed describing control measures.

Considerable interest was shown by the fact that so many attended in spite of the severe storm.

S. H. Boomer - New Hampshire

NEW HAMPSHIRE WELL REPRESENTED AT THE HOPKINTON FAIR

For the first time in the history of the Hopkinton Fair, the State of New Hampshire was well represented by exhibits from its various departments. The Department of Agriculture had a complete exhibit of its bovine tuberculosis eradication, the Department of Fish and Game an excellent fish and game exhibit and the Forestry Department exhibits of blister rust control, forest fire control, planting on state lands. In addition and in cooperation with the Forestry Department exhibits, the president of the Merrimack County Woodlot Owners' Association placed a fine exhibit of forest products and pruning as carried on in the woodlot of the Winnepocket Farm owned by Mrs. Larz Anderson, of which he is superintendent.

Our blister rust exhibit depicted in simple form, the spread of the disease from the pine in the spring to currant and gooseberry bushes, from the bushes back to the pine, through the needles, in the late summer and early fall and then its growth down the twig to trunk, showing the final girdling and killing of the tree. We used large trunk infections, badly shrunken, the bark cracked with evidence of the blisters still in the cracks, several boxes showing the various types of bushes (properly labelled) a small twig with infection very prominent and needles still on to show the manner in which it enters the tree, another large trunk infection with infected branch still attached, showing method in which the disease works down branch, enters trunk, girdles and kills the tree. Our background was entirely of yellow crepe paper. At the top we had a sign which read "WHITE PINE BLISTER RUST". Our large specimens stood on boxes 8 to 10 inches high (also wrapped in yellow crepe paper) and leaned against the background. Over each specimen and before the boxes containing the bushes were suitable placards which told the story. In order to make the exhibit more complete, we ran red ribbon streamers from the first infection on the left to the boxes containing the bushes, from the boxes to the twig and from the twig to the infection on the extreme right. Attached to the ribbons were small paper arrows to show the direction of spread.

It was exceedingly interesting to watch the people as they came through the room in which these exhibits were located. Most of them entered from the north, turned naturally left to view the fish and game exhibit, then as they got further into the room they began to look around. As their eyes caught the contrasting yellow and green of our exhibit, they would almost invariably swing across the aisle to our blister rust demonstration, satisfy their curiosity, get the information they wanted together with our pamphlets, move on to the Forestry Department general exhibit and then on to the forest products exhibit of the Winnepocket Farm, later completing their examination of the fish and game and agriculture exhibits and then out of the building at the south end. It was some little time before we got onto what was happening. Once we did notice it we watched with a great deal of interest and satisfaction. It seemed to me that there was more interest in our forestry exhibit this year than ever before and for the three days we had our demonstration at the fair we could have used several blister rust men to properly interview the number of people who came to the exhibit section reserved for us.

T. J. King. New Hampshire.

BLISTER RUST EMPLOYEE DISCOVERS NEW CENTER OF EUROPEAN CORN
BORER IN VERMONT

Mr. F. H. Rose, Blister Rust Agent at White River Junction, Vt., in a letter of October 3 describes the discovery of the European corn borer by one of his foremen:

"Mr. E. F. Green, blister rust foreman, while working in the town of Plymouth on September 19, had occasion to interview a resident of the town about the removal of some Ribes. During the conversation, the man mentioned that something was destroying his corn. Mr. Green volunteered to look at it and upon so doing found it was the European corn borer. The Vermont Department of Agriculture was notified at once and specimens sent them.

From the above it can be seen that blister rust workers can and do render valuable service to other Bureaus in the Department."

Note:-Dr. W. H. Larrimer, Senior Entomologist, in Charge, Cereal and Forage Insect Investigation, Bureau of Entomology, informs me that while the discovery of the European corn borer at Plymouth was not the first found in the state, (the borer already having been reported from the Townships of Bennington and Fownal), he was very appreciative of the cooperation received in this instance.

R.G.P.

OBSERVATIONS ON FOREST PATHOLOGY IN GREAT BRITAIN
AND DENMARK

* * * * *

The planting of five-needled pines is stated to have been definitely abandoned in Great Britain on account of white pine blister rust (Cronartium ribicola), the uredo-teleuto stages of which were abundant in places on cultivated black currants (Ribes nigrum). Eastern white pines (P. strobus) on Bornholm were heavily damaged by blister rust, the nearest source of infection being black currants in farm gardens at distances of 300 to 3,300 feet from the trees. No difference in the degree of infection was apparent as the distance from the currants increased. R. nigrum should be entirely excluded from all regions where white pines are grown.

* * * * *

J. S. Boyce
Phytopathology, xvii, 1, pp. 1-13, 1927.

MICHIGAN CAMP FIRE GIRLS INAUGURATE RIBES ERADICATION IN STATE

Miss L. M. Palmer, Leader of Camp Fire Girls at Grand Rapids, Michigan, in a recent letter to Mr. E. C. Mandenberg of the Michigan Department of Agriculture, writes of their work in protecting the pine from the blister rust at their camp:

"In accordance with the plan that gooseberry bushes should be removed at regular intervals from the vicinity of their Camp, the Camp Fire Girls of Grand Rapids managed to uproot over seven thousand plants of Ribes, mostly R. cynosbati.

"This gooseberry bush removal was done at their camp at Holland, Michigan, whence I last wrote you.

"Those girls who removed the greatest number of bushes were as follows:

1. Miss Sophia Kicz, 636 Emperor St. Grand Rapids
2. Miss Mary Vern Porter, 50 Indiana Ave. " "
3. Miss "Pat" Lobensky, 314 College Ave. " "
4. Margaret Larson, 1694 Jefferson St., Muskegon

No. 1 pulled 359; No. 2 pulled (at two different times) 493;
No. 3 pulled 29; and No. 4 pulled 43.

These were all leaders in their squads which went out on consecutive weeks. In all the girls covered about 7-8 acres of ground.

No infected trees or plants were discovered, neither did we want to."

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PEST CONTROL ON THE SOUTHERN CALIFORNIA BORDER

Reference was made by this writer some time ago to the activities of plant inspection at border points in California. As a result of more complete data just made public by the State Department of Agriculture, the subject again assumes both news and educational importance. At three such border points (Daggett, Blythe and Fort Yuma) the number of automobiles inspected in 1926 was 99,025; from them 6706 shipments were seized as contraband on account of citrus canker, 2931; cotton boll weevil and pink boll worm, 1409; sweet potato weevil and pink boll worm, 213; oriental fruit moth, 748; navel orange worm, 1341; alfalfa weevil, 26; white pine blister rust, 20; citrus white fly, 6; Mexican fruit fly, 9; avocado fruit fly, 9; and avocado weevil, 3. Little if any of these confiscations were of material carried by commercial orchard interests, nurserymen or florists. For the most part the guilty parties were "just people" touring the country with California as their destination. While en route they make purchases of fruit, vegetables, flowers, plants and seeds; knowing nothing about quarantines or economic entomology, they cannot be expected to be cautious.

Pest Control on the Southern California Border (Cont'd)

It is this condition that renders the introduction of pests a matter of some concern to horticultural communities and forcibly explains why California fruit growers are insistent on rigid inspection at the State's border points.

California is certainly destined to possess a full quota of botanic gardens, founded largely by private means. The latest aid in this direction is the donation of \$120,000 by Mrs. Anna Blacksley Bliss for the future maintenance of the Botanical Gardens of the Santa Barbara Museum of Natural History.

The Florists Exchange
Sept. 24, 1927.

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RHODE ISLAND BLISTER RUST NEWS

"Gone are the Days of Currant Jelly"

The agent was recently able to stir up quite a bit of interest in blister rust control in the town of East Greenwich, by giving the Editor of the East Greenwich News a requested Blister Rust News Article of educational nature. The editor was interested enough to make a human interest story out of it and made it a front page headliner in the paper which is published weekly. The following is an abstract from the article showing how the story was written:-

"Gone are the days of the currant jelly, - the white currant jelly, the red currant jelly and the black currant jelly with its peculiar tang, home-made from your own garden's product; gone apparently, to join the chestnuts which you gathered in the woods and roasted over the kitchen stove on winter nights. And all on account of the white pine blister rust."

"For the currant bush is the nurse of the blister rust, -"

This article has been a great help in spreading knowledge of the work especially since a house to house cultivated Ribes survey is being made in that town.

State Fair Demonstration

A blister rust fair demonstration featuring young white pines with trunk canker was placed at the Combined Agricultural Shows Exposition, at the Rhode Island Auditorium, at Providence, November tenth to thirteenth. Approximately 10,000 people coming from both rural and urban districts saw the exhibit. The agent met and talked with several people from Connecticut and Massachusetts who owned currants and who declared they would eradicate them. Contacts with out-of-state residents were made at each of the four Rhode Island Fairs. A total of 50,000 people attended the four fairs and saw our demonstration this season.

A. W. Hurford, Rhode Island.

IDAHO ESTABLISHES A BLISTER RUST CONTROL AREA

* * * * *

STATE DEPARTMENT OF AGRICULTURE
BOISE, IDAHO

QUARANTINE ORDER NO. 10
(New Series)

PERTAINING TO WHITE PINE BLISTER RUST

WHEREAS, the fact has been determined that the dangerous and injurious disease to white pines known as white pine blister rust (*Cronartium ribicola*, Fisher) now exists in Washington, Oregon and British Columbia, and

Whereas, this disease is not known to occur in the State of Idaho, but threatens

WHEREAS, it has been determined that to spread into and become established in the State of Idaho, and currant and gooseberry plants (*Ribes* and *Grossularia*) are the alternate host plants of this disease, and that the occurrence of these plants in the white pine growing region of Idaho constitutes a distinct menace to the white pine forest.

NOW, THEREFORE, I, J. S. Welch, Commissioner of Agriculture of the State of Idaho, by virtue of the authority vested in me by Chapter 222, Idaho Compiled Statutes, do hereby order and declare, that, in order to protect the five-leafed (white) pines in Idaho from infection by the white pine blister rust, that portion of Idaho lying north of the following line is established as a blister rust control area, to-wit: Beginning at the Idaho-Washington state line at the Northwest corner of Township line between townships 39 north and 40 north to the east line of Range 4 west; thence south along said range line to the south line of township 39 north; thence east to the branch of Potlatch Creek on the line of the Northern Pacific Railway approximately in Sec. 33, T. 39N., R. 3W.; thence in a general southerly direction down said creek and main Potlatch Creek to its mouth at Arrow Junction on the Clearwater River; thence east and south along the Clearwater River to the point where said River is intersected by the south line of Township 31N.; thence east along said township line to the south boundary of the Selway National Forest and east along said National Forest Boundary to the Idaho-Montana line. And a quarantine be and is hereby established against possessing, propagating or planting any currant or gooseberry plants in said area or transporting within said area any such plants, the shipment of which originates therein, or transporting into said area any currant or gooseberry plants, the shipment of which originates in any other part of the state.

All horticultural inspectors are hereby ordered and instructed to intercept, condemn, destroy or return to the shipper any currant or gooseberry plants transported, propagated, planted, or in possession within said district, or being transported from any other district in Idaho into said district. Any violations of these orders will be dealt with according to law.

This order shall take effect and be in force on and after the 4th day of August, 1927.

Approved: E. C. Baldridge,
Governor.

(signed) JOHN S. WELCH,
Commissioner of Agriculture.

COMMENT ON SHEEP GRAZING IN PINE WOODLOTS

I was very much interested in the article on page 259 of the October number of the Blister Rust News relative to sheep grazing in a woodlot.

As you may know, I am very much interested in this matter of grazing in the woodlots and have followed the matter closely here in New York whenever opportunity offered. I have incontrovertible evidence that cattle and horses do damage to white pine both by trampling and by browsing off the shoots. On the other hand, I have not seen evidence of such damage by sheep though there are a great many sheep raised in New York and they have access to self-sown pine if not to many plantations.

I was very much interested the other day to have the confirmation of my own observations by a farmer who, for many years, had raised both sheep and cattle. He took me to typical areas on his large farm and showed me the damage done by cattle to young voluntary pines and across the fence were other areas in which sheep had grazed continually for a number of years without damaging the pine at all.

It was his feeling that sheep could very safely be turned loose in pine plantations. This would help in keeping down the competition of weeds and grasses during the first critical year of the life of the plantation. He stated, however, that there were one or two restrictions even in allowing sheep in such a planted area.

1. They should not be turned in, in the spring until there was a good supply of pasturage and browse for them.
2. The number of sheep should not be in excess of the pasturage available.

Nov. 3, 1927.

J. A. Cope, Extension Forester
New York State

FURTHER NOTE ON THE WEYMOUTH PINE

I was interested also in the quotation in the last News Letter from the January number of Forest and Forest Life about the melancholy pine. I wonder, however, if this will not carry to some of our men an erroneous idea as to the origin of the European name for white pine, Weymouth or Weymouth's pine. Weymouth pine may be a pleasing or poetic fancy comparable to our expression of the mournful pine. It seems that the white pine in Europe was called Weymouth's pine from Lord Weymouth, who introduced it into England over 200 years ago. In Evelyn's Silva, Edition of 1786, note by Hunter, mention is made of large trees on Lord Weymouth's place. Theodore Hartig in his Culturpflanzen Deutschland, 1851, gives Weymouth - Kiefer (Lord Weymouth's Kiefer) Pinus strobus. Sargent in his Silva, Vol. 11 writes "Pinus strobus at once became popular with English planters through the example of Thomas, Viscount Weymouth, second Marquis of Bath, who planted it on his estate at Longleat: and it is now almost universally called in Europe the Weymouth Pine.

L. H. Pennington Forestry
Pathologist, N.Y. State College of/

REFORESTATION IN GRAFTON COUNTY, N.H.

Record of Plantings from 1910-1927 Show Total of 1,044,516 Trees
Planted in County.

Below is a record prepared by the State Forestry Department of all seedlings purchased from them by Grafton County land owners from 1910 to 1927. This list indicates that reforestation is going on to a considerable extent in our county. Interest during the past year has been quite keen and indications are that more trees than ever will be set out next spring.

One farmer recently said that he was figuring on setting pine on about 20 acres of what is at present hand mowing land. It is very rough land and is now growing a poor quality of hay that is expensive to harvest. Yet pride seems to demand that this almost waste land which cannot be worked by machinery be mowed and slicked up each year, not only on this farm but on many others. It is an annual expense as the hay does not pay for getting it. It can go into pasture or pine but this man said "I can set it out to pines and then forget it."

Persons interested in setting out trees next spring can get all information needed at the Farm Bureau office.

COUNTY SUMMARY 1910-1927.

White Pine	746,260
Scotch Pine.	33,335
Red Pine	76,925
Norway Spruce.	123,991
Norway Pine.	3,080
Spruce	3,850
White Spruce	47,575
Cedar.	500
White Ash.	7,825
Poplar.	1,000
Balsam Fir	175

A large number of the plantations have been protected from white pine blister rust by the eradication of currant and gooseberry bushes. This menacing disease causes great damage in a young growth and it is well to start control measures as soon as a plantation of white pine is set out.

Grafton County Farmers' Reporter.
Woodsville, N.H. Sept., 1927.

TAG YOUR JOB

The Washington Office has available, in large quantities, the following tags with which the agents are doubtless already familiar: "This is a Blister Rust Canker," "Blister Rust is Killing this White Pine," and "This Wild Gooseberry Bush Spreads Blister Rust."

There are also available the following 36" by 24" posters: "Protect Your Pines", "Look, Blister Rust Ahead," "Blister Rust Kills White Pine," and "Blister Rust Can be Controlled". A small quantity of the diamond-shaped poster which has proved very worth while, "This Pine Lot has been Protected from Blister Rust," is also available.

That the use of these tags and posters has been very effective is proved by the fact that the Editor has often received word from the blister rust agents, stating that people have come to them and said their interest in blister rust was first aroused by seeing these silent instructors. Very frequently letters are received by the agents from officials of large lumber-using firms, commending the use of the Blister Rust tags or posters.

Advertise your work. Request your supply of tags or posters now!

L. E. H.

- - - - -

A SECOND PROGRESS REPORT OF THE RESULTS SECURED IN TREATING PURE WHITE PINE STANDS ON EXPERIMENTAL PLOTS AT KENNEBEC, NEW HAMPSHIRE

A further report (E.S.R. 47, p. 146), covering data obtained in measurements taken in 1925, 20 years following the establishments of the plots. On the heavily and lightly thinned plots 81 and 75 per cent, respectively, of the original trees have been removed, while at the same time 32 per cent have been lost from natural causes on the control area. The diameter of the average tree in the heavily thinned plot after the 1925 thinning was 11.2 in., as compared with 8.2 in the control area. At the same time the heavily thinned trees averaged 65.1 ft in height as compared with 60.5 ft. for the nonthinned trees. The total amount removed in the four thinnings from the heavily and lightly thinned plots was 15,294 and 10,056 bd.ft., respectively. The basal areas per acre in the heavily, lightly, and nonthinned plots were 100.85, 125.71, and 203.94 sq. ft. respectively.

Determinations of annual growth showed a more rapid development in the thinned stands from 1910 onward. In the period 1921-1925 the differences were not marked due to exceptional weather conditions. Considering that thinning the stands has reduced the wood capital per acre, it is deemed all the more remarkable that the actual volume increase was larger on the thinned than on the unthinned stands. The volumes expressed as percentages on the heavily, lightly and nonthinned plots after treatment in 1925 were 58, 70, and 100 respectively.

Among the advantages obtained from thinning were the early financial returns from the sale of timber, healthier trees, and better advance reproduction. As contrasted with light thinning, heavy thinning gave larger returns at each cutting and at the same time produced an equal or greater amount of wood.

R. C. Hawley (Yale Univ. School Forestry Bul. 20 (1927)
Extract from Experiment Station Record, Oct. 1927.

REFORESTING VERMONT

It is most interesting news when Vermonters learn from the state forester that additional land will shortly be purchased and improved so that the department's production of seedlings will be increased to five million per year.

At present, Vermont's output of forest seedlings is one million, eight hundred thousand, in which she stands fourth in the list of reforesting states, being topped only by New York, Pennsylvania, and Massachusetts. If the new areas are acquired and planted next spring, Vermont would probably stand third in the number of forest trees propagated and planted.

This matter of reforestation is not only important from the standpoint of economy and conservation, but also as a matter of scenic assets, and, still more important, of effect on our drying-up water-courses.

The first have to do with the preservation of home supply of growing timber, the latter with the danger of our beautiful hills and mountains being denuded of their trees and thereby preventing the water from the rains and melting snows, from being conserved, held back, absorbed and turned into the streams by seepage and filtration.

All this is more or less a public matter, but reforesting of private areas cannot very well be undertaken by the state, so the best the state can offer at present is good, forester's care of the state's own timber reserves, patrol of forest-fire areas and the distribution of seedlings at cost.

For the rest, it is significant that the steady campaign of the foresters, the newspapers and the various associations interested in forestry have created a demand for seedlings that may run into five million trees per year.

From Rutland (Vt.) Herald.

Edit:-While white pine is not the only species being planted in Vermont, it is one of the trees being relied on to form a part of Vermont's future forests. This is a further indication of the confidence which is being expressed by the public in the control of the white pine blister rust.

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CUTS AVAILABLE

Cuts have been made for Figures 1 and 6 of Miscellaneous Circular 40. Mr. Newman, State Leader in New Hampshire, has been using these cuts in a recent issue of "New Hampshire Forests". If anyone desires to borrow these cuts they may be secured by application to the Washington Office. A cut of Figure 8 has also been made but is not available at present.

A.G.F.

WHITE PINE LUMBER PRODUCTION IN 1925.

In looking over the last report of the Bureau of Census covering lumber production in the United States, I find that New Hampshire ranks third in the 25 states who are reported to cut white pine. Minnesota leads with about 479 million board feet; Idaho ranks second with a cut of about 389 million and New Hampshire is third with a cut of about 155 million and the state of Maine is fourth with 121 million. In addition to this, figures are given for the States of Washington, Wisconsin, Massachusetts and New York and the cut of the balance, namely 16 states, is lumped together under one figure. As things are, New Hampshire has ranked third or fourth for quite a number of years and we lay it to the fact that there is so much second growth white pine in the state.

I might say in conclusion so far as New Hampshire is concerned, that the figures given in this publication fall short of the cut reported to the State Forestry Department by timber operators in 1925 by about 20 million board feet, so that actually the cut for that year in this state is approximately 175 million.

In this same report of the Bureau of Census I figured out the cut of all species in New Hampshire for the same year, and find that out of a total lumber cut of 237,821,000 board feet, the cut of white pine was 155,142,000, which constituted 65% of the total lumber production in New Hampshire. This is an interesting figure from our standpoint as it shows the relative value of white pine against all other timber species of New Hampshire. This report of the lumber cut of course does not include any timber cut for pulp.

L. E. Newman - New Hampshire.

The following tables are from the report on Census of Manufactures: 1925, Lumber and Allied Products, Bureau of Census, Dept. of Commerce.

PRODUCTION OF WHITE PINE LUMBER, FOR PRINCIPAL STATES: 1925

State	Number of: active mills reporting	Quantity (in feet b.m.)	Percent dis- tribution	Average value per M feet f.o.b. mill
United States	2,100	1,521,128	100.0	\$32.53
Minnesota	117	479,930	31.5	\$30.19
Idaho	4	389,357	25.6	\$77.04
New Hampshire	26	155,142	10.2	\$28.61
Maine	37	121,231	8.0	\$31.32
Washington	4	90,531	5.9	\$36.85
Wisconsin	15	83,717	5.5	\$30.99
Massachusetts	13	68,990	4.5	\$24.38
Michigan	30	38,400	2.5	\$11.15
New York	26	24,104	1.6	\$36.29
All other States (see Table 42)	580	37,418	2.4	\$30.72

Production of White Pine, 1925 Cont'd.

The species of white pine covered by the preceding table are as follows:

Eastern White Pine (*Pinus strobus*); cut in the Lake States, the Northeastern States, and the Appalachian region.

Norway (or Red) Pine (*Pinus resinosa*); cut in the Lake States and marketed to a large extent with white pine, although botanically a yellow pine.

Jack (or Hudson Bay) Pine (*Pinus banksiana*); cut in the Lake States.

Western White Pine (*Pinus monticola*); cut in Idaho, Montana, Washington, and Oregon.

ACTIVE SAWMILLS REPORTING, AND REPORTED PRODUCTION OF EACH KIND
OF LUMBER, AND OF LATH AND SHINGLES, BY STATES: 1925

STATE	Softwood Lumber Sawed (M feet B. M.)
	White Pine
United States	1,521,128
Connecticut	7,749
Georgia	3,302
Idaho	389,267
Kentucky	3,849
Maine	121,239
Maryland	2,450
Massachusetts	63,290
Michigan	28,406
Minnesota	479,930
Montana	9,915
New Hampshire	155,148
New Jersey	62
New York	24,109
North Carolina	5,989
Ohio	179
Oregon	538
Pennsylvania	13,577
Rhode Island	1,927
Tennessee	9,749
Utah	20
Vermont	14,938
Virginia	11,233
Washington	90,559
West Virginia	3,970
Wisconsin	80,732

AVERAGE VALUES OF LUMBER AT THE MILL PER M. FEET, BOARD MEASURE,
BY KINDS OF WOOD, FOR SPECIFIED YEARS: 1899 to 1925

KIND OF WOOD	1925	1924	1923	1922	1921	1920	1919	1917	1909	1899
All Kinds ¹	\$28.02	28.57	31.78	26.15	27.47	38.42	30.21	20.32	15.38	11.13
Softwoods										
White Pine	\$32.53	33.63	34.85	36.37	30.03	41.49	32.83	24.81	18.16	12.69

¹ Including minor species.

PRODUCTION OF SUGAR PINE¹ LUMBER FOR PRINCIPAL STATES: 1925

State	Number of active mills reporting	Quantity (M feet b.m.)	Per cent dis tribution	Average value per M. feet f.o.b. mill
United States	61	300,992	100.0	\$44.79
California	51	299,456	97.5	\$44.99
Oregon	10	7,536	2.5	36.82

¹ Pinus lambertina, the only species cut as sugar pine, is found commercially only in California and southern Oregon.

Extract, Census of Manufactures: 1925
Lumber and Allied Products
Bureau of Census, Dept. of Commerce

The press of October 18 reports: "Utilization of cut-over lands for reforestation will be discussed at a conference of business interests of the country called under the auspices of the Chamber of Commerce of the United States in Chicago, November 16 and 17. Possibilities of using the 29,000,000 acres of forest area in the middle Atlantic region in order to assure the industrial East a continuous source of wood supply from its own natural resources will be considered..."

P E R S O N A L

Mr. John W. Charlton, Blister Rust Control Agent of District 3, with headquarters at Gloversville, took the fatal step on October 22, and informs us that his bride's former name was Eloise Belle Durham of Salem, New York. Jack kept things pretty quiet in the last hours, nevertheless, his friends and associates join in wishing him happiness.

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Mr. E. G. Woodward, otherwise known as "Major", Blister Rust Agent of Warrensburg, N. Y., has just returned from a two weeks trip to West Virginia. Major called at the Washington office on his return.

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Mr. Irving S. Bowlby, Blister Rust Agent of Washington County, N. Y. has been transferred to take over the work in Lewis and Oneida Counties, with headquarters at Lowville. Mr. Bowlby did excellent work while in Washington County and is therefore well qualified to take over the work in the new district.

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Mr. H. L. McIntyre, Supervisor Forest Pest Control, New York, visited the Washington office on Monday, October 24, and had a conference with Dr. J. F. Martin, on the work in New York State.

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Mrs. B. B. Hart returned to work in the Washington office November 1, after being absent on account of severe illness since February 1. We are glad to welcome her back.

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Effective November 16, Agent W. F. Pratt's headquarters will be changed from Albany, N. Y., to Saranac Lake.

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Mr. E. F. Ross has been appointed collaborator at Olympia, Washington, effective November 10, 1927.

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Agent Ray R. Hirt, headquarters Syracuse, N. Y., resigned October 8, 1927.

Mr. S. B. Detwiler who has been in the western states for a number of months, is expected to return to Washington the latter part of November.

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Mr. Gilbert B. Posey, Pathologist in Charge of Western work, left Washington on October 31 to attend the conference on Blister Rust which will be held in Portland, Oregon on November 4, 1927.

P U B L I C A T I O N S

Blister Rust

Anon. Ribes Eradication Experiment. (At Deerhead, town of Lewis in Essex County, N.Y.) Forest Worker, July, 1927.

Stillinger, C. R. White Pine Blister Rust in the West. Calif. Dept. Agr. Spec. Pub. 54 (1925), pp.80-82.

Ribes

Park, C. A. Eradication of Cultivated Black Currant in Oregon in Relation to the White Pine Blister Rust Situation.

White Pine

Hawley, C. R. A Second Progress Report of the Results Secured in Treating Pure White Pine Stands on Experimental Plots at Keene, New Hampshire. Yale Univ. School Forestry Bul. 20 (1927), pp.25.

Koch, Elers & R. N. Cunningham. Timber Growing and Logging Practice in the Western White Pine and Larch-Tir Forests of the Northern Rocky Mountains. U. S. Dept. of Agriculture, Dept. Bul. No. 1494. September, 1927.



On the Firing Line with Ribee Bill

Well Agent, Bradder's sheep-eatin' Ribes started something didn't they. Both Cope and Fivaz have contributed their bit toward the eddicatin' of the publick. You're next.

That bunch of Camp Fire Girls did some pullin' of Rites. Boy! page Mr. Stouffer in Michigan to check up on the thousand Ribes to the acre near Grand Rapids.

What did you boys do up in New York and New England to drive the blister rust all over Pennsylvania and over 17 new counties in Michigan this season. Flood years and optimum spread of blister rust must go together. Wonder if they had a lot a extra rains out west too, for the blister rust did some spreadin' out in Washington, Oregon and Idaho.

Say Agent, do you know your Ribes? Have you a photo handbook of Ribes in your jeans like Massachusetts men have to show the pine owners what to look for.

BLISTER RUST NEWS



December 1927.

Volume XI

Number 12

U.S. DEPARTMENT of AGRICULTURE
BUREAU of PLANT INDUSTRY
Office of Blister Rust Control

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E D I T O R I A L S T A F F

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S. D. Conner, Associate Editor Maine
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December - 1927 -

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

THE BLISTER RUST NEWS

Issued by the Office of Blister Rust Control
and the Cooperating States

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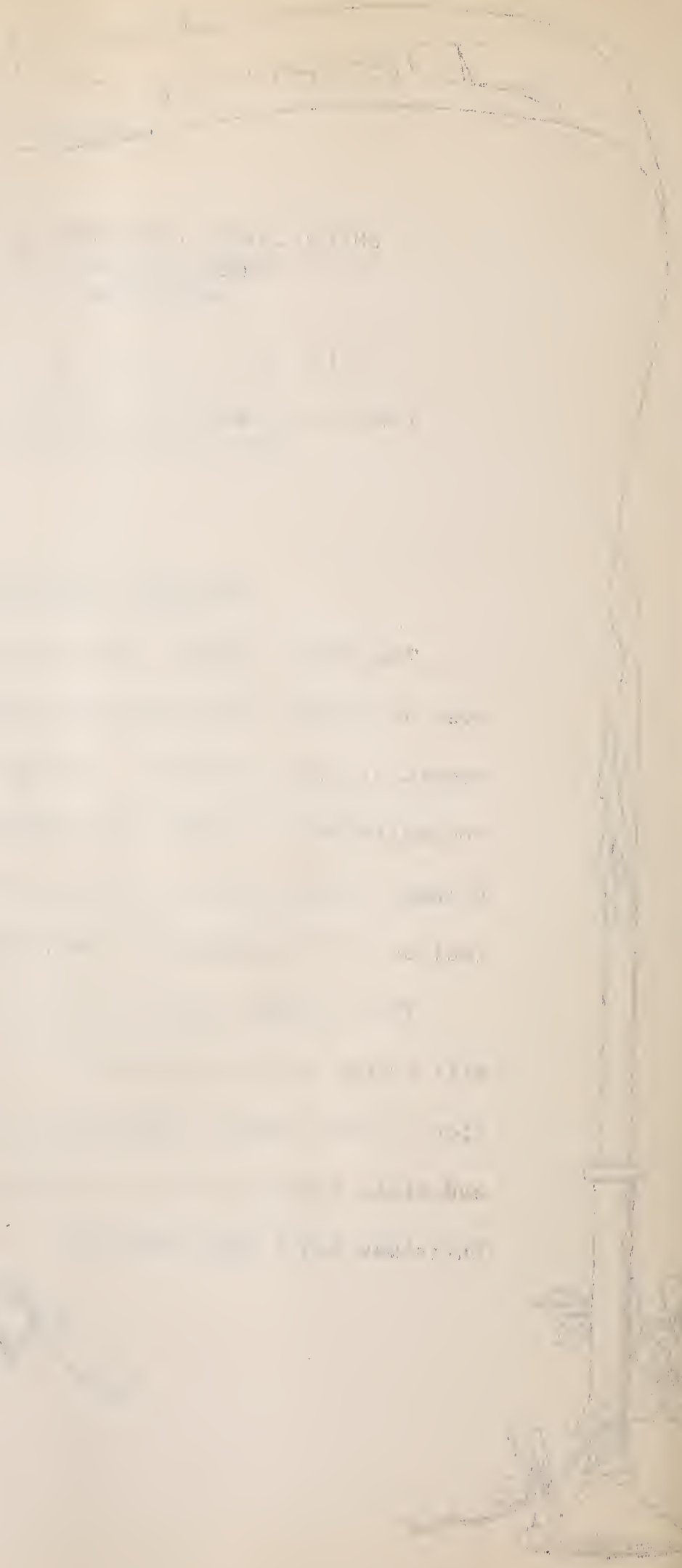
CHRISTMAS GREETINGS

The faith, loyalty, enthusiasm and unity of purpose of blister rust workers have made possible a fine record of public service. Another year of successful accomplishment is about to be added to that record and brings to each of us its reward of happiness and satisfaction in the knowledge of work well done.

The holiday season with its messages of good will brings me the opportunity to express my appreciation of the helpful cooperation of my fellow-workers and state cooperators and to wish each of them a Merry Christmas and a Happy New Year.

J. H. Martin.





Very faint, illegible text, possibly a list or a series of notes, arranged in several lines. The text is too light to be transcribed accurately.

[Faint handwritten signature or name]

[Faint handwritten signature or name]

TREE CLUB INTERESTED IN BLISTER RUST

On November 17, I gave a talk on blister rust before the members of the Tree Club of Norwell (Mass.) High School. This organization is believed to be the first Tree Club of its kind in the country. The program for the year includes talks by the extension forester, the County boys' and girls' club agent, the forestry specialist from the Massachusetts Agricultural College and the blister rust control agent.

The Club meets the third Thursday of each month, and the boys and girls are given instructions enabling them to identify trees, samples of wood, and mount specimens of leaves and twigs. A field trip is planned for a visit to Pembroke, where the blister rust infection area will be studied. In the spring, the members will also devote one field trip to the identification of Ribes.

One rather novel idea connected with this club is to have one member of the committee visit the homes of the members, to urge the parents to give the boy or girl an acre or more of forest land or potential forest land to take care of.

At the end of the school year, it is planned to give prizes to the scholar presenting the best array of specimens, and the one who shows the best ability in identifying trees.

E. M. Brockway - Mass.

RIBES NIGRUM SEEDS WILL GERMINATE

I have never noted R. nigrum escaping from cultivation in Oregon, which does not seem the natural condition. The shoots and crowns sprout on very slight provocation, and occasionally the seeds germinate. Mr. Root's article in the (Western) October News Letter* brings up old recollections. On one occasion three of us pulled out some sixty big bushes in East Portland, Oregon. The place was ideal for black currants, a slight swale with a gentle slope provided moist conditions. The bushes were lusty and made an almost complete ground cover, and weeds seemed strangely absent. After pulling up the bushes, seedlings were noted on the north side of the patch in abundance, not eight or ten, but hundreds of them. Say, gentlemen, another such chance to study R. nigrum seedlings will not be passed up without so much as a raise in blood pressure.

Root will think I have been associating with Paul Bunyan or Ananias, but this story has not been multiplied or cube rooted since the telling on several occasions before reading Root's tame account. Also I can conjure up witnesses if my word be doubted.

L. N. Goodding
Western Blister Rust News Letter
11-15-27

* Reprinted in the Blister Rust News
November, 1927.

BLISTER RUST AT BAR HARBOR ATTRACTS ATTENTION

The town of Bar Harbor, Maine, is undoubtedly the most famous summer resort in this country. Rugged mountain peaks, mountain lakes, palatial estates and the Atlantic Ocean combine to make Bar Harbor all it is advertised to be, and more. Lafayette National Park, containing 27 square miles, part of which is in the town of Bar Harbor is an added attraction to tourists.

Mount Desert Island contains four towns, Bar Harbor, Mount Desert, Southwest Harbor and Tremont, but all the towns seem to look to Bar Harbor for leadership. Native white pine grows abundantly on the island and is used to a large extent for ornamental planting. Having heard that blister rust was present on the island and realizing the aesthetic value of the pine, the Bar Harbor Board of Trade invited Mr. Frost to tell them about the disease at their annual meeting. In order to bring the story nearer home, a hurried survey of conditions in Bar Harbor showed that blister rust was present everywhere and in sufficient quantity to be alarming. The first plot examined contained 100 trees, and 65 of these were infected with blister rust. At another place one can look in any direction and see mature trees fairly 'burned up' with limb cankers. White Pine seedlings in the forest nursery on the estate of John D. Rockefeller Jr., were found diseased with the rust. Five ornamental pines in the corner of a garden on the Atwater Kent estate were found to have stem cankers and on these particular trees several limb cankers had been removed by the gardener who did not recognize the disease. Many of the large estates were given a hurried examination and in every case the disease was found present on the pines.

With blister rust present in such alarming proportions, much interest was taken in the work Mr. Frost was doing, and I might add that popular sentiment points toward a good big town appropriation to carry on the eradication next summer.

Mr. Frost took me along to run the lantern, assist in getting field data and to help with the service work. This is the first time in my blister rust experience that I have carried on this type of work without meeting a single bit of resistance from pine owners or interested skeptics. It seems to indicate that there is a very marked relationship between VALUE, DAMAGE and INTEREST as applied to our work. This may be stated as an equation, $VALUE + DAMAGE = INTEREST$.

S. D. Conner - Maine.

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BLACK CURRANTS ONE HUNDRED PER CENT INFECTED IN R. I.

Every cultivated black currant found in Rhode Island this year, where the leaves were still on the bushes, were found infected with blister rust.

A. W. Hurford - R. I.

MAINE'S DESIGNATION AS "PINE TREE STATE" SERIOUSLY THREATENED

Speaker at Bar Harbor Board of Trade Annual Meeting
Pleads for Control of White Pine Blister Rust

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* * * * *

W. O. Frost, Rev. Henry E. Dunnack and Senator J. Sherman Douglas were the speakers of the evening and their addresses furnished material for thought, as one member said, which would have given three meetings a big place on the records.

"Blister Rust is present on Mount Desert, as well as in every township in southern Maine, and it is my duty as a representative of the State Forestry Department to tell you what it is; where it came from; how it spreads; its life history; why it may be controlled; what to do; what the State and Government are doing to control it; what we have done to date; and what you should do to control the disease on this Island," said Mr. Frost.

Continuing, Mr. Frost went on to explain the disease, its methods of control and the beginning of the work here and illustrated various points as he went along.

Mr. Frost's address was one of the finest ever heard here. He took facts and statistics and he made them live before the mind's eye of every listener, until each one present vowed to do everything possible to save the pines of Maine. His pictures were well chosen and finely shown.

"The project I am stressing is one that affects every man, woman and child in our state economically as well as from an aesthetic viewpoint. From the time our first settlers arrived, up to the present, Maine has been bountifully supplied with a type of tree growth second to none for our general welfare. For generations this tree has been the mainstay in many towns, and still is although the original old growth has been cut years ago, only to be followed by a second and a third growth.

"The tree considered in this conservation project is the white pine, the abundance of which gave Maine its name, "The Pine Tree State," the disappearance of which, like the fate of the eastern chestnut, would be serious to many a farm and community.

"With the exception of a few minor troubles, fire excepted, all seemed well with this tree in Maine, until about eleven years ago when an imported disease was found attacking it at Kittery Point, a disease that is fatal to the tree attacked, and one that spreads rapidly, but whose control, unlike the chestnut blight, is easy and practicable. This disease is the white pine blister rust, a deadly tree disease that is with us to stay, and one that must be controlled if we are to maintain our standing as the 'Pine Tree State.'"

Bangor (Me.) Daily Commercial.
11-16-27.

INFECTION AREA AT HINGHAM, MASS.

A re-examination of the infection area at Hingham was recently made, and 81% of the trees in one-quarter acre plot were found to be infected. It was observed that all the pines that were not infected with blister rust were trees that had not retained their needles more than one year. The infection is traceable directly to nearby black currants which were recently removed.

This infection area was first found in June 1926, and was described in the Blister Rust News for November of that year.

E. M. Brockway - Mass.

ON PRUNING PINE

1. I was know a young feller
Got name O. M. Pratt;
He don wear funny ting
What you call beaver hat.
Bot got brain on de head,
An tink all de time;
How mak premier class lumber,
Grow on de white pine.
2. More as twenty-five year,
De pine, he was prune,
An dees tree he was cot heem,
Me tink pooty soon;
An by Gar! I was tole you,
He get it right thought,
He cot off de small limo,
Bon! clear lumber he got.
3. Now, New Hampsh, my bon fren,
Got beeg lot white pine,
Was grown every plac most,
Grow fas all de time;
Let me tole you some ting,
She's low on de grade,
And when you was cot heem,
Sapree! leetle money was made.
4. Monsieur Pratt by mak prune,
Was got right on idea,
For make high per cent, clear lumber,
On hees every tree;
An prove it, By Gar!
When he saw out de log.
De price he was get, Hein?
Pay beeg for hees trub.
5. He was prune op de tree,
Lot seexteen foot high,
Seax log mak tousan foot,
When she grow by and bye;
One man was prune ten log,
On hour, maybe---
Eeef not, Monsieur Pratt,
I was tink pay for spree.
6. No you fella got white pine,
Was grow on de farm,
Was make just boxboard,
Eeeg lim mak de harm;
I was tole you some ting,
You was mak beeg mistake
You don prune heem young,
But now she's too late.
7. De price of boxboard
She gone don lak de Hell
An stompape Sapree!
What you get, if you sell;
But eff de log, she's clear,
Sne sell lak hot cake,
An Meel man he come round,
An say, What you take?
8. Now Monsieur Pratt, show de way,
How grow de white pine,
De more better market,
Better price, every time;
But, begin prune heem up,
When hees height hinchies tru
An when she go on de meel, Hein?
She's jes same he tole you.

TALK ON BLISTER RUST AND FORESTRY GIVEN BEFORE FIVE R. I. GRANGES

The agent gave a talk at Little Compton, on forestry and blister rust control the evening of November 2, before a meeting of five combined granges. Approximately 250 people from the eastern part of the state were present.

The need for actual forest practice was stressed. Blister rust control was explained and emphasized as a very necessary part of forest protection in Rhode Island. The value of white pine as Rhode Island's most important timber tree was brought out in the quoting of data from a pine survey made in 1925, valuing Rhode Island's white pine at 1,500,000 dollars on the stump. The speaker told the group that he was not on his feet to prove that forest practice was needed. They, themselves, knew that. He stated that he was placing them on the defensive. They owned the 49,000 acres of waste land in Rhode Island. They also owned the burned and cut over scrub oak areas that comprised a large part of the 200,000 acres of forest land in the state. It was their problem. They were paying taxes on non-productive land.

Questions were asked after the talk in regard to blister rust control. Many of the people present were hearing an explanation of the work for the first time.

A. W. Hurford - R. I.

MAINE EDITOR URGES COOPERATION IN FIGHTING BLISTER RUST

The menace of white pine blister rust as described by Mr. Frost at the annual meeting of the Board of Trade Monday evening is of sufficient importance to command the serious attention of every citizen of Maine. The very existence of every pine tree in the Pine Tree States is threatened by this disease. The disease is present to an alarming extent among the pines of Mt. Desert Island. None of our citizens is without a direct interest in this serious problem. Thousands are individual owners of lands where pine trees grow. We all have a direct interest in the pines of the National Park and of the other reservations and park lands. We all enjoy the beauty of the pines owned by our neighbors. Mt. Desert Island without its pines would be a much less lovely Mt. Desert.

Fortunately the State and Federal forestry departments know all about this particular disease. They know how it spreads and how to control it and to eliminate it from any area. It is certain that a united effort must be made to fight this disease here. It will do no good for one land owner to fight the disease without the cooperation of his neighbor. The white pine blister rust must be fought in Lafayette National Park, in the reservation lands, on private estates and on every acre of this island. The fact that we are an island makes our fight an easier one. The disease can be checked and in the end eliminated with the cooperation of all interested. It will cost the towns and the individual property owners a considerable sum to win the fight, but the fight is worth while. In fact, we can no longer afford to ignore the seriousness of this situation. By all means read what Mr. Frost has to say and help to inform your neighbors as well.

Editorial in Bar Harbor (Me.) Times.

R.I. AGRICULTURE COMMISSIONER LEWIS BOOSTS BLISTER RUST CONTROL

Blister rust control was included in an illustrated talk on the activities of the State Department of Agriculture given by the Commissioner of Agriculture, Harry R. Lewis, on the evening of December 2, before a group of 200 people attending the annual Rhode Island Agricultural Conference at the Hotel Biltmore, Providence.

Mr. Lewis praised blister rust control as what he thought to be the most effective control work ever carried on against an insect pest or tree disease in Rhode Island. He based proof of this on lack of commercial damage to white pine from blister rust since control of the disease was started, and on the very low cost of protection. He stated that blister rust control during the last eleven summers has brought about the eradication of 189,789 currant and gooseberry bushes on 270,367 acres of land. Mr. Lewis stressed the fact that the average cost to eradicate these areas is to date only 14-3/4 cents per acre. He declared that this insurance against blister rust rating as low as two cents on the dollar, considering the value of the standing pine, was satisfying to him and should be to the public.

A brief explanation of the life history of the rust was given by Mr. Lewis while showing lantern slides of blister rust and white pine.

A. W. Hurford - Rhode Island.

NEW YORK FORESTRY TOUR

The fourth annual Adirondack forestry tour arranged by the New York Conservation Department and the farm bureaus of the State was a five-day pilgrimage of 100 people, beginning September 15. The participants must have been thinking in millions when they reached home, for they had visited the Saratoga nursery with its 44,000,000 trees and the Lake Clear nursery with its 24,750,000, the watershed on which Glens Falls has in 17 years planted more than 2,000,000 and the Roosevelt Forest on which the State planted that many last year, and even a private plantation of millions--the 7,000-acre property of T. C. Luther, in Saratoga County.

The route began in Utica and proceeded to Saratoga, to Lake George, to Saranac, and back to Albany. It led past old stands of white pine and of the spruce hardwood type; a forest infected with white pine blister rust and one that years ago was the scene of a disastrous fire; public camp sites maintained by the State; a lookout tower and a State fish hatchery; and forest plantations of many kinds and many ages.

Forest Worker. November, 1927.

NOTES ON THE BLISTER RUST CONFERENCE AT PORTLAND, OREGON

The annual meeting of the Trustees of the Western White Pine Blister Rust Conference was held at Portland, Oregon, November 4, 1927. The meeting was attended by a good representation of the lumbering and forestry interests of Idaho, Washington, and Oregon.

Following the presentation of reports by this office, the Office of Forest Pathology, and a paper by Mr. Detwiler summarizing the western work and the present status of the disease, a great deal of general discussion developed. This discussion was made more pointed by the announcement of the discovery of blister rust infection in northeastern Washington, Idaho, and northwestern Oregon during the past autumn. Many of the points which were raised had to do with the feasibility of Ribes eradication, when it should be applied, and what age classes of timber should first be protected. The need was stressed for a delimitation of the area in north Idaho and adjacent territory within which local control is to be applied.

It was the recommendation of this meeting that the Forest Service be urged to undertake studies in both the western white and sugar pine regions that would assist in this decision and would show under what conditions these species may be successfully grown. Further recommendations of the meeting were to the effect that the Ten-year Program requires no material alteration at this time but should be followed through in the interests of protection of western white and sugar pine timber; that upon application and with proper arrangements as to the cost of the work, this office should provide interested timber owners with estimates on the cost of protection of pine upon their lands; that the various states continue and increase their efforts looking to the control of white pine blister rust; and that quarantine regulations be continued, strengthened and enforced as necessary to prevent the further artificial spread of the rust.

Western Blister Rust News Letter
11/15/27

FURTHER NOTE ON PRUNING WHITE PINE FOR BLISTER RUST

Concerning the pruning for blister rust carried on at the Kimball Atwood white pine plantation at Andover, Me., of which note was made in the October issue of the Blister Rust News, Agent D. S. Curtis writes that: "This is the second time that the plantation has been gone over and where it was possible to save the white pine from blister rust by pruning, this was done. Where the tree was too badly diseased to be thought worth saving it was destroyed. The pruning was done very carefully, two men taking 18 days each to complete the work, which cost \$144. Two thousand seven hundred and thirty five trees in all were destroyed. About 9,000 trees were left, of these two-thirds had limb infections which were removed." These are all that remain of a plantation of 15,000 trees set out in 1916. The Ribes in and around the plantation were removed in 1924 and 1925.

PROGRAM

THIRTEENTH ANNUAL BLISTER RUST CONTROL CONFERENCE

16th Floor, U.S. CUSTOM HOUSE, BOSTON, MASS. - NOVEMBER 28th & 29th 1921

November 28th - 9:30 A.M.

- Opening Address.....W. O. Filley
- I. Feasibility of Skunk Currant Eradication.....C. C. Perry
- II. Most Efficient Eradication Crew.....J. E. Riley
- III. Survey of Cultivated Ribes in Rhode Island.....A. W. Hurford
- IV. Is Re-Eradication of Ribes Necessary.....P. H. Merrill
- Will Pine Owners Re-Eradicate.....S. V. Holden
- V. Standardization of Checking Practices.....J. D. Kennedy
- VI. Making Winter Work of Agents More Effective.....H. L. McIntyre

November 29th - 9:00 A.M.

- VII. Experiment to Determine Value of Pre-Eradication
and methods of Increasing Acreage Eradication Per Man*
- A. Standard Six Man Crew and Scout.....L. E. Newman
- B. Two or Three Man Crew and Scout.....W. O. Frost
- VIII. Ribes Ecology.....A. E. Fivaz
- IX. Progress Report of Epidemiology Study.....L. H. Pennington
- X. Informal Talks: Subjects and Speakers Will Be Announced at the Conference.

GENERAL DISCUSSION FOLLOWING EACH PAPER

Space will be provided for Exhibit Material.

The Proceedings of this Conference will be mimeographed and bound as heretofore and will be available for distribution at least by spring.

SIDE LIGHTS ON THE BOSTON CONFERENCE

Mr. W. J. Filley, Connecticut Experiment Station Forester and collaborator of our office, in the opening address stated that he was the only one present at this conference who also attended the first meeting to consider blister rust control, held in New York City in 1906. Few of us now engaged in blister rust control realize that 18 years ago there was held such a conference, in America.

Mr. Filley paid a high tribute to the late Mr. Clifford Pettis who was with us a year ago and who has passed on during the year, as the man most responsible for starting the work of investigation and control of the white pine blister rust. He was also the first state forester to recognize that blister rust could be controlled.

* * * * *

Case of New Hampshire vs. Maine, or shall we use a 6-man or 2 or 3 man crew. Sparks flying. No decision.

Everybody spoke highly of Al Fivaz' scientific work and desired him to carry on.

"Father" Hurford was not afraid to ask questions. I predict good work from Rhode Island.

We missed "Jack" Corliss and Baker of New Hampshire, and Ben Nichols of New York; and where was our stocky friend Ninman from Wisconsin?

We were glad to welcome Mr. Rex of New Jersey and Mr. Stouffer of Michigan at the Conference.

* * * * *

An interesting talk on the larch canker was given by Dr. Spaulding; and on the Woodgate rust on Scotch pine by Dr. York. Dr. Pennington spoke on the epidemiology of the rust, with particular reference to the reasons for its great spread this year in the East. Dr. Snell gave a rapid-fire talk on blister rust damage studies carried on in the Adirondacks.

Dr. McCubbin's experience in Pennsylvania, with the school children sending in blister rust specimens on Ribes from 30 counties, was interesting, as showing possibilities of blister rust educational and service work with the schools.

* * * * *

Was it a good conference!!! The agents say yes with one accord. Nearly all of them were on their feet - some of them many times. The Thirteenth was the Agents Conference alright, alright and one of the best ever held.

A SMALL GROUP MEETING

A talk on forestry and blister rust was given before the Men's Community Club of Templeton, Mass., on the evening of December first. Twenty-five people were present and considerable interest was shown. A small exhibit consisting of two specimens of the spring stage of the disease on pine, a few infected wild Ribes leaves in Riker mounts and some pictures showing damage was on display. After the talk the specimens and pictures were closely examined by those present.

It seems to me that a great deal more is accomplished at a small, informal, group meeting such as this than at the meetings attended by a larger number. The people are used to meeting together and are well known to each other. They do not hesitate to ask questions and it usually ends up in a general discussion of the disease.

William Clave - Massachusetts.

Q U A R A N T I N E

INTERCEPTIONS OF BLACK CURRANTS AND WHITE PINES BY PORT INSPECTORS
OF THE FEDERAL HORTICULTURAL BOARD

Seventy-five currant, 12 gooseberry plants, and upwards of 190 white pines from Canada are reported by Mr. E. C. Harshbarger, Bureau of Agricultural Industry, Lansing, Michigan, as having been intercepted and refused entry by Mr. Warren T. Wood, In Charge of the Federal Horticultural Board's Port, Detroit, Michigan. It is learned that this record covers the period from April 1 to October 31, 1927. Such interception of violations of the blister rust quarantine (No. 7) is indeed excellent work.

In an interview with Mr. Wood last July by the writer it was learned that port inspection work on the Michigan coast is carried on principally at Windsor and Walkerville ferries, Detroit, with weekly trips to Port Huron, 75 miles distant. With the extensive coast line of the State, port inspection presents a large problem, but the cooperation of U. S. Customs officials in requiring passengers to surrender all plant material is of great advantage in the work. Such material is held until the Board inspector makes his rounds and passes upon it. If the plants are of such a nature that they may enter, a permit is issued by the inspector under Quarantine 37 for emergency entry; but if they are prohibited, by quarantine, the matter is dropped with refusal of permit and the plants returned to Canada.

At Boston, three consignments of currants and gooseberry plants from foreign shores were destroyed by Customs officials during the year 1925. And on March 9, 1926, a consignment of currant and gooseberry plants including 1 black currant bush and three black currant cuttings, mailed from Belgium to Pawtucket, R. I., were refused entry.

M. A. Thompson.

AMERICAN RAILWAY EXPRESS COMPANY ISSUES BULLETIN OF INSTRUCTION
ON HANDLING NURSERY STOCK SHIPMENTS

An attractive and well gotten up leaflet entitled, "Right Way Bulletin No. 25 - Handling Shipments of Nursery Stock," has been issued by the American Railway Express Company. This leaflet instructs employees relative to packing, handling and delivery of nursery stock, and places special stress upon observance of quarantine regulations. The first of the five "essential features" listed for handling this traffic is:

To see that no shipments are accepted contrary to the Quarantine Regulations. These regulations are strict, and it is positively necessary that they be complied with to the letter to prevent spread of Japanese beetle and other pests. The government will not tolerate violations of these important regulations, and responsibility for violations may be placed on the employee personally, as well as on the Company.

Referring to General Circular 4-D of the Company, the circular calls special attention to the quarantines on account of white pine blister rust and Japanese beetle. Another item reads:

Japanese Beetle Quarantine - Prosecution of Agents.

Three cases have just been reported where agents of this Company accepted shipments in violation of the Quarantine Regulations against Japanese beetle and in each of these cases the agents pleaded guilty and were personally fined by the Judge of the United States District Court.

The Judge, in addition to assessing fines, gave these men a severe lecture on the importance of carrying out the provisions of the Japanese Beetle Quarantine. He emphasized the fact that the food supply of the country was jeopardized when violations were allowed to occur. The shippers were also fined.

We must do everything possible to stop the spread of this injurious pest.

Agents must take the time to read and carefully study the circulars issued by the Traffic Department from time to time containing information as to quarantines.

Help in the Fight Against Destructive Pests!

Take no Chances -- Be sure that no shipments are accepted contrary to Federal, State or County regulations.

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The above circular was published in October, 1927, by the American Railway Express Co., Department of Public Relations, 46 Trinity Place, New York, N.Y.

A DISCUSSION OF METHODS OF CHECKING RIBES ERADICATION

What per cent of acreage, upon which Ribes have been eradicated, should be checked? The discussion at Boston brought to light certain phases which are very interesting. It appears that if a strip system of obtaining acreage is followed, that no one is satisfied without a general check of the job. Consciously or unconsciously, the feeling of the average agent seems to be that he knows where the overlooked Ribes are apt to be, better than a compass needle or any variation of a similar set system.

It occurs to me that a short account of the method of estimating timber some ten to fifteen years ago in Virginia and some other southern States by the Forest Service for the purpose of buying lands for the National Forests may be of some interest. The original plan was to run strips every one fourth mile and tally the trees on five per cent of the area. It was found that in the region generally there were three main types known as Cove, Slope and Ridge. Certain sub-types were also recognized as well as cut over and burned modifications. The narrow coves were generally covered with heavy stands of valuable timber worth perhaps half the value of the entire tract even though the cove area might amount to not more than five per cent of the area of the tract. The slope type contained a lighter stand of timber and on account of being less accessible, had a less value per thousand board feet on the stump. The area of the slope type might run from forty to sixty or even seventy per cent of total. On the Ridge type, the timber was short, defective, and difficult of access. General usage came to accept that the acreages of these various types were very important. The next conclusion was that a higher per cent of land should be covered in those types and sub-types where the value and volume of timber increased. Perhaps only two and a half per cent of the Ridge type would be estimated. Perhaps ten per cent of the Slope type and in some cases fifty or even a hundred per cent of the Cove type.

Is there any analogy between this method of estimating timber and checking Ribes eradication? The swamp areas heavily infested with Ribes correspond to the Ribes-free areas which are thrown out by scouting. The logging crews must go over all the accessible timbered area as the crew men go over the areas to be eradicated. The blister rust eradication checker follows the crew instead of preceding it like the timber cruiser. We have been little concerned about trying to recognize Ribes types. It would be difficult and expensive. We use analogy merely to see where we should be led.

(Recommendations have been made that the areas containing a heavy initial infestation of Ribes be marked on maps. Would not this work be expedited and checking be improved if there were adopted some plan which the crew could use for permanently marking such areas on the ground at the time of eradication. If future eradication must depend on the land owners, they should be better able to cope with the situation if they can have certain known danger areas plainly laid out for their later inspection. They should be willing to stand the expense of making the record permanent on the ground by means of paint, blazes, etc.)

Before we leave the subject of strip checking it may be of interest to check the method to see into its exactness as depending on the acreage of perhaps three Ribes types. Let us assume a tract of 100 acres. Before eradication it contained 20 acres free from Ribes, 20 acres are swamp containing 1000 bushes per acre, 60 acres are upland containing 20 Ribes per acre. The total number of bushes amounts to 21,200, or an average of 21.2 per acre. Assume a standard of 90 per cent efficiency of eradication uniformly over the 100 acres. This give 19,080 bushes pulled and 2,120 bushes left. An average for the 100 acres gives 19.08 pulled and 2.12 bushes left.

Three different checks of the eradication are made.

Check No. 1 (Ideal)	2% of each type				
	0.4 acres	Ribes free	0 bushes found		
	0.4 "	swamp	40 "	"	"
	1.2 "	upland	2.4 "	"	"
	<hr/> 2.0 acres		<hr/> 42.4 bushes or 21.2 per A. 90% effic.		
Check No. 2	0.4 acres	Ribes free	0.0 bushes found		
	0.6 "	upland	1.2 "	"	"
	1.0 "	swamp,	100.0 "	"	"
	<hr/> 2.0 acres checked		<hr/> 101.2 bushes found, or 50.5 per A. 79% apparent erad. effic.		
Check No. 3	0.3 acres	Ribes free	0.0 bushes found		
	1.4 "	upland	3.0 "	"	"
	0.2 "	swamp	20.0 "	"	"
	<hr/> 2.0 "		<hr/> 23.0 bushes found or 11.5 per A. 90% apparent erad. efficiency.		

As has been generally agreed, future danger lies in the quantity of exposed leaf-bearing stem rather than in a high percentage of "left" bushes on an area where they were scarce to begin with. Whether or not any system of checking is perfect may be debated by those who wish to be theoretical. The best result of any system of checking is to keep the crew men on their toes to serve as insurance that too many bushes will not be left.

E. D. Clark, Conn.

OFFICE COMMENT

Preparation of Maps, Charts, Etc.

In referring to maps, charts, reports, tabulations, etc., we frequently find difficulty in using the data because we cannot determine the date of preparation or the author, so I again wish to stress the importance of marking maps, charts, etc., with proper legends so that they may readily be identified as to date and person preparing, and what the data represents.

S. B. Detwiler.

R. I. ACQUIRES THE GODDARD ESTATE, NAMED FOR ITS 500 ACRE FORESTRY PLANTATION

The Potowomut Neck Estates, East Greenwich, R. I. were recently donated to the State of Rhode Island by Robert Goddard and his sister, Marquise d'Angidigne of Paris. This tract of land which includes a 500 acre plantation of various tree species, is to be known as Goddard Memorial Park and thrown open for public use under supervision of the Metropolitan Park and Recreation Commission.

This plantation obtained its start when Henry G. Russell, a former owner, made his first real experiment in planting trees as a solution to the shifting sand problem which existed. His first planting made in 1870, was a few Lemley willows, and later in that same year he set out two or three acres of white pine which today has grown to heights of more than 70 feet. While white pine made up the bulk of Mr. Russell's activities and now grow on 300 acres of the 500 acre tract, he also experimented with other trees. The conditions proved particularly suitable for the growing of red pine, as the flourishing plantations of that species today bear witness. The white pine weevil has done considerable damage to the white pine. Thus there can not be a true comparison of growth with red pine.

The white pine areas were first scouted for blister rust in 1912 by Dr. York, present forest pathologist of New York. He found no blister rust on the pine but cultivated gooseberry bushes within 800 feet of pine were found infected with the blister rust and destroyed. Sections of the plantation near swamps have been scouted several times since but no rust has been discovered.

The superintendent of the estates, Mr. Thomas G. Mathewson, told the state blister rust control agent, this fall, that if the white pine weevil could be controlled as easily as blister rust, he would be happy.

It might be that if those diseased gooseberry bushes has not been eradicated in 1912, the Providence Journal of December 11, in speaking of the plantation started on barren sand dunes might not as readily say:-

" Today, this identical tract - the Goddard Memorial Park - bears the richest forests in the State of Rhode Island. Proud pine trees and lordly oaks by the tens of thousands, flourish in a soil made fertile and they no longer stand at the mercy of storms blown in from a grim Atlantic."

A COMPILED YIELD TABLE FOR WHITE PINE IN NEW YORK STATE
FOR POPULAR USE

"In connection with New York's reforestation movement, which began on a large scale in 1923, it became imperative to develop a yield table showing the approximate number of board feet and cubic feet that might be expected from plantation of various species of forest trees. To be of the greatest value such tables should approximate average conditions in the State and should be conservative.

The following represents a study made by Arthur S. Hopkins, now Assistant Superintendent of State Forests. Mr. Hopkins began to assemble his data as soon as plans of the State in regard to reforestation had been enlarged in 1923-24, but the results have not hitherto been presented to the general public."

As the use of such a table as now appears to be necessary is to be popular rather than technical, it has been thought that figures for only one site quality should be given and Site Quality II has been selected as representative of average conditions throughout the State of New York.

A suggested yield table for use in New York State in connection with plantations has been made by adopting figures from the yield table for second growth white pine constructed by L. Margolin in New Hampshire in 1906 and by the State Forester of Massachusetts in 1911.

Age Years	New Hamp. Site II Cu.ft. per Acre	Bd. Ft. per Cu. Ft. New Hamp.	Suggested Bd. Ft. Table Per Acre
25	2,000	2.18	4,360
30	3,220	2.19	9,370
35	4,612	3.72	17,157
40	5,550	4.31	23,920
45	5,387	4.76	30,202
50	7,012	5.18	36,322
55	7,562	5.36	40,532
60	8,077	5.57	44,989
65	8,525	5.76	49,104
70	8,925	5.90	52,357
75	9,225	6.00	55,950
80	9,650	6.10	58,865
85	9,975	6.19	61,245
90	10,250	6.27	64,267

A plotting of the above suggested yield figures shows that they fall slightly below Site II for New Hampshire. They also check very closely the figures of Simmons secured by measurements of various older plantations in Massachusetts.

The above yields in cubic feet and board feet are suggested for use in New York State and represent the average of the cubic foot tables of Massachusetts and New Hampshire Site II and these figures transposed into board feet by the ratio of board feet per cubic foot derived from the New Hampshire Site II Tables.

New York Forestry Year Book 1927.

FORESTRY OR COMMON SENSE

Frank A. Pike of Effingham, Carroll County, N.H., doesn't profess to know much about forestry but he has been practicing selective cutting in his woodlot for twenty years.

His farm is located near the Ossipee River, which has enabled him to get good prices for pulp and long logs on its banks. Mr. Pike has cut from 10,000 to 40,000 board feet each year from about 90 acres and has more timber on his lot now than he had twenty years ago. The large trees have been cut and carefully taken out,; gray birch and other inferior hardwoods have been cut for cordwood.

Some parts of a pasture which have not come in naturally to pine have been planted with trees taken from an old field. Mr. Pike now has an uneven-aged stand of healthy growing white pine.

Whether we call it forestry or common sense doesn't matter as long as we get the right result.

S.H. Boomer - New Hampshire.

FORESTERS URGED TO TEST BALKAN WHITE PINE

Dr. Herley Spaulding, forest pathologist at the Northeastern Forest Experiment Station, Amherst, Massachusetts, strongly urges upon American foresters the importance of prompt testing in the country of the Balkan white pine, Pinus peuce. In Europe this species has proved itself very resistant to the white pine blister rust. Doctor Spaulding believes that it will grow well in this country, particularly in the colder situations. He recommends that everyone who is in charge of planting operations within the areas infected or threatened with blister rust procure a few hundred young trees of this species for careful test in the forest. For this purpose one-half to 1 pound of seed should be obtained from European dealers in tree seeds and planted in local nurseries near the final planting grounds. The seed normally require a full year to germinate, but this delay can be avoided if, before being planted, the seed are treated for about 10 minutes with sulphuric acid and then washed with some alkaline solution. Germination may be hastened also by stratifying the seed over the winter.

Forest Worker, Nov, 1927.

SUGAR PINE AND ITS DISTRIBUTION

By John Hemphill, Madera Sugar Pine Co.,
Madera, California.

By reason of overproduction, improper advertising and the practice of faulty principles of merchandising, the Sugar Pine producers have in recent years absolutely failed to enjoy that is due them, by virtue of the splendid quality of their output. Their light has been as a candle hidden under a bushel. A realization of the necessity for vigorous sales promotion work and a carefully thought out plan for merchandising their production has now dawned upon them, and much greater attention is certain to be given to these matters than they have ever before received.

No one interested in the marketing of Pine lumber can travel through the East without being impressed by two things:

(1) The identity of Sugar Pine has not been definitely established in the eastern markets and its true value is not fully appreciated.

(2) Eastern lumber buyers are very loyal to the wholesalers of their section, and mill-to-consumer plans of merchandising will not prove popular.

SUGAR PINE - A TRUE WHITE PINE

Early settlers in those sections in which Sugar Pine grows noticed that, in drying, a fine powdery substance, sweet to taste, sometimes appears on the surface of Sugar Pine lumber cut from butt logs. Moreover, in deep fire scars, small globules of this white, sweet-tasting, sugary substance sometimes form. Due to this peculiarity of the wood, it was given the local name of "Sugar Pine." Botanically, as well as physically, it is a true White Pine.

Had Sugar Pine been introduced into eastern markets as California's White pine, it undoubtedly would have been very readily accepted by Eastern users. By reason of its name, it has been to a large extent more or less generally regarded as some strange sort of Pine, differing from the White Pine to which the Easterner is accustomed. That this is the case is not strange when the history of Pine is taken into account.

In the order of its introduction, Pine appeared to the users of lumber in this country in the following order:

New England White Pine,
New York and Pennsylvania White Pine,
Lake State White Pine,
Canadian White Pine, and
Idaho White Pine.

With the East educated to the idea of White Pine lumber, Sugar Pine producers overlooked a wonderful opportunity in not selling their product as a White Pine. Instead, they permitted Oregon and Washington to appear on the market with a Western Yellow Pine, paraded under the name of "Western White Pine, and a similar species of Yellow Pine to be sold from California as Cali-

ifornia White Pine (Trade Name). Up until very recently, the eastern market has not known Sugar Pine as a true White Pine, and generations of the advertising of the virtues of White Pine lumber have been lost to Sugar Pine by reason of the name it chances to bear.

No wood so completely and satisfactorily supplied the needs of home builders and the varied requirements of the trade as the Eastern White Pine (*Pinus Strobus*). The magnificent forests of White Pine, first exploited in the northeastern states, then gradually westward into the Lake States, are now largely a memory, and it is no longer possible to take care of the demand for this premier of soft woods. Fortunately, however, nature has proved, on the Pacific Coast a wood fully measuring up to the standards established by Eastern White Pine, and waiting, not to displace it, but rather to continue it in those markets, and for those uses where soft, easily worked Pine is best.

Sugar Pine (*Pinus Lambertiana*) belongs to the White Pine group, and botanically and physically closely resembles its eastern relative, the famous White Pine (*Pinus Strobus*). It has a wood which is soft, straight grained, and equally as durable as the Eastern White Pine. Innumerable examples can be found of split Sugar Pine shake roofs which have withstood the rain and heat for over a half century. Such disintegration in the roof as may be noticed is never due to rot; for the shakes will continue to turn water until worn away by the attrition of wind and rain.

For pattern purposes, the genuine Eastern White Pine which grew in the region of the Great Lakes, and further East had no equal. It was very soft in texture, so much so, that it has always been called "Cork Pine." There is now so little of this type of timber from which to produce high-grade pattern stock that it may be considered as almost extinct. What is available cannot be had at anything like reasonable prices. From the standpoint of the patternmaker, however, there is nothing particularly alarming about this situation, because Sugar Pine timber produces high grade, soft, straight-grained lumber, in every way suited to pattern purposes.

The sale of lumber not a White Pine as a substitute for the Eastern White Pine, and the selling of a true White Pine under the name of "Sugar Pine," are responsible for a great deal of confusion in the minds of eastern buyers as to the true character of California Pine. Some think California lumber an unsuitable substitute for Eastern White Pine because they have purchased under the name of "California White Pine, (Trade Name)", a product which is not a true White Pine, and they are unwilling to consider a trial of Sugar Pine as White Pine because of the experience they have had in using what is called California White Pine (Trade Name). From the standpoint of the Sugar Pine producer, and intensive educational and advertising program in the interest of California's true White Pine (*Pinus Lambertiana* or Sugar Pine) is a vital necessity.

The California Lumber Merchant
July 1, 1927

To Be Continued in the January Issue

PERSONALS

Mr. E. L. Graham, who was under appointment for three months as assistant to Mr. E. G. Rex, New Jersey, in blister rust control work, dropped into the Washington office November 29. Mr. Graham is now a Junior at the University of Maryland.

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Mr. E. L. Brockway's headquarters have been changed from Brockton, Mass., to North Abington.

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Miss Oma V. Watters, Washington office, spent the Thanksgiving holidays at The Cavalier, Virginia Beach, Va.

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Mr. John M. Palmer was appointed assistant accounting clerk in the Washington office December 1. Mr. Palmer succeeds Mr. D. D. Drake who resigned November 30.

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State Leader S. V. Holden's headquarters have been changed from Burlington, Vt., to Brattleboro.

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Mrs. M. L. Reiff, personnel clerk Washington office, left December 15 to spend the Christmas holidays with her parents at Corinth, New York.

PUBLICATIONS

Sugar Pine

Smith, C. Storell. The California Pine Station. The California Lumber Merchant. July 1, 1927. p. 33.

Hemphill, John. Sugar Pine and Its Distribution. The California Lumber Merchant. July 1, 1927. See page 323 this issue of Blister Rust News.

White Pine

Hopkins, Arthur S. A Compiled Yield Table for White Pine in New York State for Popular Use. New York Forestry Year Book, 1927. pp. 29 & 50.



